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ATARI CLASSICS

The Magazine for the Dedicated 8-Bit User

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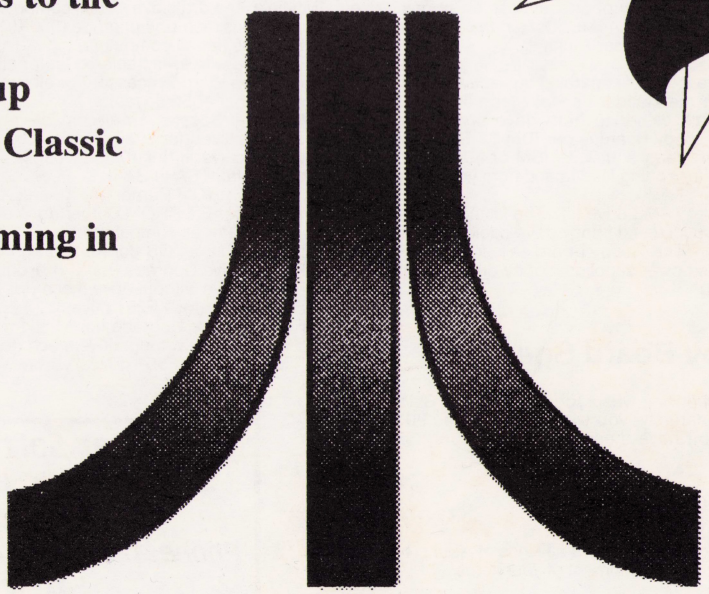

Our Second Disk Issue!

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with power products from **Computer Software Services**

The Black Box

The Black Box is an add-on board for the Atari 600XL (upgraded), 800XL, and 130XE computers. The Black Box provides many unique and useful functions.

The RS-232 port emulates the Atari 850 interface very closely, but goes beyond by providing 19,200 baud capability. The Black Box is the only interface to support **hardware flow control**. This enables owners of high speed modems (4800 baud and up) to use their modem at full speed, and not worry about data loss due to a slow BBS or terminal program.

The parallel printer port interfaces to most all Centronics-type printers. You may assign the printer number and line feed options from within the Black Box's configuration menu. The Black Box allows **buffering** of your data, either using the extra 64K in your 130XE or the optional 64K RAM in the Black Box itself.

The hard disk port was the real reason for the design of the Black Box. You may connect most any hard disk controller that is SASI or SCSI compatible, or drives with embedded SCSI controllers. It is totally compatible with the current versions of MYDOS and SpartaDOS. The Black Box allows you to have up to 96 partitions with names, and set any partition as any drive (D1: through D9:), allowing you to place unprotected single density boot programs on your hard disk. You may also write protect ALL of your hard disks with the flip of a switch.

The Black Box also provides support for users who have previously used an ICD MIO to store data on a hard disk. You can have compatibility with an MIO formatted hard disk by simply setting a dip switch.

The 6502 monitor is very handy for machine language programmers. How often have you wondered where your program was, or what caused an apparent "lockup"? Entering the monitor will show you all the processor registers, and display the disassembly of the instruction it was about to execute when you pressed the button.

A printer dump of your current screen may be done at any time by pressing one of the buttons on the Black Box. A switch allows you to choose either text or graphics dump. (The graphics dump is only available for dot matrix printers capable of graphics.)

CSS sells a variety of accessories for your Black Box. The **Black Box Case** is a durable black plastic housing for your Black Box which sells for $39.95. **Modem and printer cables** are available for $9.95 each.

The Black Box sells for $199.95 plus $8 shipping and handling. The Black Box with a 64K printer spooler sells for $249.95 plus $8 shipping and handling.

The Floppy Board

Our latest and greatest product! The Floppy Board is an add-on expansion board for the Black Box interface. It allows the user to add up to 4 inexpensive, 'standard' floppy drive mechanisms. The Floppy Board supports almost all floppy drive configurations, including 360K, 720K, 1.2MB, and 1.44MB. Built-in the Floppy Board are the Black Box Enhancer and a version of our Super Archiver.

Disks formatted on the Floppy Board are accessed at parallel bus speeds, providing a **substantial** performance increase over the standard serial Atari floppy drive. In fact, Floppy Board drive access is much closer to hard drive speeds than to standard serial drives! Included with the Floppy Board is our **IBM/ST Disk Transfer Utility** program, which allows you to both read and write IBM or ST disks. This makes the Floppy Board the ideal method for porting files to and from your PC or ST!

Also available for your Floppy Board is our 1.44MB drive kit. The kit includes a high-quality 1.44MB drive mechanism, power supply, and floppy drive cable, and sells for only $79.95 plus $8 shipping and handling. The Floppy Board sells for $149.95 plus $5 shipping and handling. CSS also sells power supplies, floppy drive mechs, and custom floppy drive cables. Call for pricing.

Black Box/Floppy Board Special!

For a limited time, CSS is offering special pricing when you buy both the Black Box and Floppy Board. When purchased separately, you would spend $349.90 to get these items. Our special pricing lets you have these products for only $329, a savings of over $20!

8-bit Repairs

Having a problem with your 8-bit equipment? CSS repairs all kinds of Atari products, from computers to disk drives. Call us to arrange shipment of your items.

If you have two of the same product and both need repair, take advantage of our **two for one** repair deal. Send both items to us, and we will fix one of them **FREE** and keep the other one for parts. Again, call us to arrange shipment.

The Black Box Enhancer

A must for all Black Box owners! The Black Box Enhancer is a plug–in module for your Black Box, enhancing the printer functions and adding an instantly available, full featured **sector editor**!

The built-in **screen dump to printer function** will now render a hardcopy with a 16 shade grey scale representation of the colors. A special graphics printer handler is built-in, which allows any output directed to P9: to be printed on your graphics compatible printer with the same character font used on your computer. This means all the Atari special control and graphics characters will be printed, along with inverse.

The built-in Task Master sector editor is the most powerful editor for the 8–bit. It contains a sector copier featuring multiple copies, automatic formatting, and uses all available memory for fast disk duplication. The Task Master is not limited to only floppy disks. It can handle up to 16 megabyte hard disk partitions (even in the sector copier mode)! The Task Master provides full DOS support for MYDOS, SpartaDOS, and Atari DOS derivatives. Subdirectories are fully supported! You may link through individual files by simply moving through the directory and highlighting the file you wish to edit. 16-bit and sector map linking are supported for hard disks, and 11-bit linking for floppies. It is ideal for quickly editing files and repairing damaged directories.

The Black Box Enhancer sells for $49.95 plus $5 shipping and handling.

Ordering Information

Call CSS at (716) 429-5639 between 10am and 5pm Eastern Time to order, or send your order to the address below. CSS accepts payments in cash, money order, Visa, MasterCard, or COD. Personal checks are also accepted, but shipment of your product is delayed until the check has cleared. Foreign orders must be paid in US funds.

Call or write for our free catalog of products. CSS also has a free catalog of pre-owned software, Atari related books, and owner's manuals for most hardware products.

Other Products

Bit-Writer (for 1050 drives)	$ 79.95
Black Patch (for all computers)	$ 29.95
Disk Cracker (for all computers)	$ 19.95
Hard disk controllers (for all computers)	CALL
Hard disk systems (600/800XL and 130XE computers)	CALL
HD Pro Backup (for Black Box owners)	$ 49.95
Heavy Duty power supplies (600/800XL and 65/130XE computers)	$ 17.95
Multiplexer including master & 2 slaves (for all computers)	$199.95
Multiplexer extra slave (for all computers)	$ 89.95
Power Plus memory upgrade (800XL and 130XE computers)	$ 99.95
Quintopus (for all computers)	$ 39.95
Quintopus with switchable ports (for all computers)	$ 59.95
Richman's Word Processor (for all computers)	$ 39.95
Silencer (for 1050 drives)	$ 19.95
SIO Power Booster (for all computers)	$ 39.95
Super Archiver (for 1050 drives)	$ 69.95
Super Archiver II (for 1050 drives)	$ 99.95
Upgrade from SA to SA II	$ 29.95
Super-E EPROM Burner (for XL and XE computers)	$169.95
Gang Super-E EPROM Burner (for XL and XE computers)	$199.95
Super Pill (for all computers)	$ 24.95
Ultra Speed Plus OS (for XL and XE computers)	$ 69.95
XF Dual Drive Upgrade (for XF551 drives)	$139.95
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XF Enhancer (for XF551 drives)	$ 34.95
XF Single Drive Upgrade (for XF551 drives)	$ 99.95
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News Roundup: Happenings In The 8-Bit World

Ben Poehland, Managing Editor

New Upgrade Policy from CSS

Bob Puff of Computer Software Services (see the CSS ad elsewhere in this issue) recently announced a general policy regarding upgrades of their software products and firmware ROMs. They will upgrade any software/firmware to the latest revision if you return your original disk or ROM along with a $5 payment. Since removal of a ROM will render your hardware inactive, contact CSS first to make arrangements if your needs are so critical you can't do without the ROM for awhile. We also recommend you contact CSS prior to sending away for upgrades to determine if you already have the latest upgade, or even whether you really need it. Especially in the case of firmware ROMs, most upgrades lately just fix obscure bugs that only pertain to unusual applications or environments. In general, if you're already using a CSS firmware product (Black Box, Floppy Board, EPROM Burner, XF551 Upgrade, etc.) and haven't experienced any problems, then you probably don't need an upgrade.

GEnie Lowers Rates

Good news for daytime GEnie users, GEnie recently lowered its PrimeTime hourly rate from $18 to $12.50/hour. (Seems to us the arithmetic would have been simpler if they could have made it an even $12.00.) We aren't sure whether this has anything to do with the recent rate reductions announced on CompuServe (see the April '93 *AC*, p. 30), but it sure is a step in the right direction! Now, if only we could get some really motivated Classic Atari enthusiasts to take charge of the Atari8 RoundTable over on GEnie *sigh*. Hello Darlah, are you listening?

AC Editor Takes Charge At Delphi

We are pleased to announce that AC's recently acquired Exchange Editor, James King, has also signed on with Delphi as their Atari 8-Bit Manager. This places Jim in an ideal position to maintain contact with the Atari 8-bit usergroup community in his capacity as *AC*'s usergroup liaison officer. Jim is gradually working his way through the usergroup list published on our June Software Disk and will presently let us know how many groups still exist and still support Classic Atari SIG's. Delphi susbcribers can contact Jim at his Delphi email address: KAMARO_KID. Internet users can say hello to Jim at: kamaro_kid@delphi.com . It's also interesting to mention that Jim's boss over on Delphi is Clayton Walnum, formerly of *Analog Computing*. Who knows, maybe Jim will woo Clay away from his ST, back to the trusty 8-bit?

The addition of Jim to the Delphi staff now gives *AC* a representative voice on two of the three major North American commercial networks (*AC* Staff members Bob Puff and Don LeBow are already well-known sysops in the Atari 8-Bit Forum on CompuServe). Now, if only *AC* could get a foothold on GEnie....

Another Vendor Bites The Dust

On page 232 of their "Addendum To Catalog No. 36", DynaComp Software (178 Phillips Road, Webster NY 14580 USA, 1-800-828-6772 orders, 1-716-265-4040 information), has announced a clearance of all its 8-bit software: Atari, TRS-80, and Commodore. What's that, you never heard of DynaComp? Not surprising. This is another one of those companies that hasn't advertised since 1985 and can't figure out why their 8-bit sales rolled off the table. A major software source in the early '80s, this company lost interest in the Atari market some years ago. They seem unaware of the trends in our market, have failed to upgrade their software to accomodate improvements in later hardware, and have failed to revise their price structures in accordance with market trends. In short, a classic case of "Roll Over And Die". They're going over now to the "easy" market: IBM. Grrrrrrrrr!!!

They're offering 8-bitters a software "grab-bag" deal: ten titles for $19.95. Sorry, you don't get to pick which ten titles you want, they do it for you. (Weird way to sell software.) Their Addendum states all Atari software comes on 5.25" disks in DOS 3.3 format (whatever the heck that is; *surely* it doesn't mean MS-DOS 3.3?). It's a long list of titles, here goes:

Player Piano	Body Basics
Math Whiz Quiz	Botany Fruit Key
Matt The Cat Math I	Matt The Cat Phonics
Chancellor of the Exchequer	Fun 'n' Games
Ohm's Law	Typing I
Mount St. Helen's	Solar System
Frog Master	Geometry Review
Stockaid	NY Index
Small Business System	Shopping List
Family Budget	Loan Arranger
Budget Model Analyzer	Hiscore Database
Mail Master	Golfer's Database
Disk Inventory System	Data Aid
Bowler's Database	Your First Atari Disk
Phone Directory	Hearts 2.0
Smart Keyboard	Atari Utilities
Screen Master	Intelink
Turnkey & Menu	Dfile
P-M Player Editor	P-M Toolkit
Flip Sketch	Video Titler
Crystals	Valley of the Kings
Starship Landing Party	Euchre
Go Fish	Baccarat
Forest Fire	Space Lanes
Midway	Master Match
Gomoko II	Computhello
Casino Craps	Super Sub Chase
Sea War	Leipzig 1813
Waterloo 1815	Shiloh 1862
Battlefield	Threat Force
Yacht Race	Space Evacuation
Typout	Alvin
Crazy Chase	Rings of the Empire
Space Trap	Moon Probe
Final Assembly	Cactus Leage Baseball
Diggerbonk	The Bean Machine
Locomotion	Hopper
Dragonblast	Nebs
Super Tank Attack	Doodle Drawer
Golf Pro	Paper Boy
Diamond Hunter	Cosmos

Use A High-Speed Modem On Your Classic Atari

Charles Cole, Hardware Editor

Modems On The March

If you're still using an older Atari 300 or 1200 baud modem, and would like to move up to a faster model, now is a good time to switch. If you're like me, I had started out in 1983 with an Atari 300 baud modem and thought that it was the most amazing device ever. Later, I upgraded to an Atari SX-212, and thought then that I would never need a faster modem. But, as with everything else in the computer world, technology marches on; 1200 baud is now considered somewhat slow and antiquated.

I had been wanting a faster modem for several years, but prices were really out of sight. Recently, however, newer chip sets and other technical developments have drastically reduced the prices of modems to the point where a 9600 baud model costs no more than the original outlay for an Atari SX-212.

Too Fast For Your Classic?

So, are these newer modems compatible with an Atari 8-bit machine? If you still have your modem connected through the Atari SIO port (daisy chain), the answer is a resounding NO! But, if you have an ICD MIO or CSS Black Box with their RS-232 port, practically any modem will work with the 8-bits. Although I've never owned a P:R: Connection, I believe any of these newer modems would also work with its RS-232 port. *[Editor's Note: the P:R:C also connects to the SIO daisy chain, which theoretically can handle up to 19200 baud. The Atari serial port isn't the bottleneck when it comes to speed. The only reason the SX-212, XM-301 and any other SIO direct-connect modems can't go faster is strictly due to the design limits of the individual units. -BP]*

I recently purchased an Infotel 9600-baud external modem from Midwest Micro, a heavy advertiser in *Computer Shopper* magazine, for $179. I also purchased their optional V.42bis MNP Level 5 data-compression and error-correction upgrade board, priced at $69.95, and installed it. Why did I select the Infotel model? For one thing, it has a 10-year warranty. And, believe it or not, it's actually made in the U.S.A., so repairs should be available if necessary. With the add-in V.42bis module, it has an effective data throughput of 38,400 baud! I doubt if modem technology will ever improve to the point that I'll need to upgrade this model!

So, is it compatible with Atari 8-bit computers? That depends more on your software more than it does your hardware, provided you're using an MIO, Black Box, or P:R: Connection. The only terminal software I'm aware of that even comes close to a comparable data throughput rate is BobTerm, so if you want to utilize the full capabilities of the Infotel modem, you definitely need BobTerm. If you don't already have this software, check your local BBS or network (CIS, GEnie, Delphi, etc.). I heartily advise all users to switch to BobTerm even if you don't plan on changing your modem, because of BobTerm's advanced features.

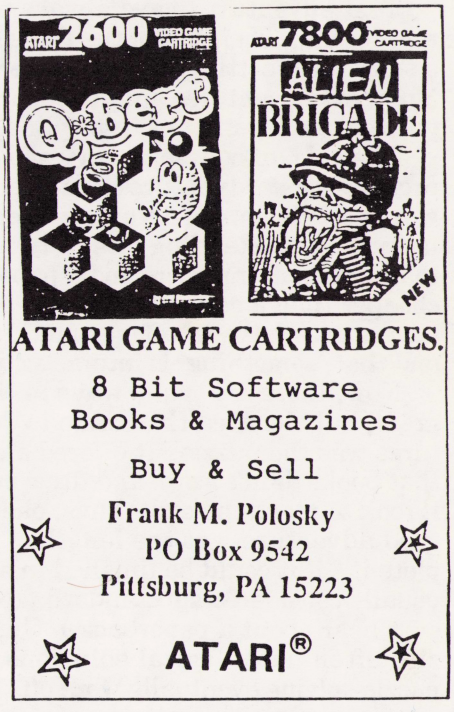
Not Only Fast, But Smart, Too

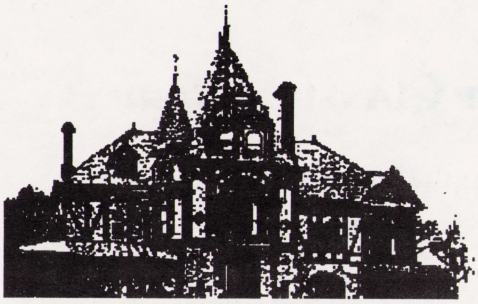
The Infotel modem is completely programmable. Documentation provided with it includes a very detailed User Manual, a 21-page User's Guide, and a 12-page pocket-size Quick-Reference Guide. If you check various computer publications, you may find a similar modem at a comparable or even cheaper price, but the main point is that any model which is Hayes-compatible should work equally well with an Atari 8-bit computer equipped with an MIO, BB, or P:R: Connection.

Now, all I have to do is find BBSs that have V.42bis MNP-5 capabilities. CompuServe supports MNP, which gives a highly reliable connection, but neither GEnie nor Delphi support anything above 2400 baud in my neck of the woods. If you know of any telecom systems that support MNP or ultrafast baud rates, please let me know. Write to: Charles A. Cole, AC Hardware Editor, 1590 Foothills Drive, Sierra Vista AZ 85635 U.S.A.

[Editor's Comment: I strongly endorse Charles's admonition for all 8-bit users to convert to BobTerm. The latest version is 1.22. Not only does BobTerm support advanced modem hardware and telecom transfer protocols, but it has absolutely the best user interface of any terminal software I've ever used. It blows away any of the versions of 850 Express!- including the Express! ROMcart- that were popular with 8-bit users in the late '80s. We might consider putting BobTerm 1.22 on the AC Software Disk if enough people request it. It's a shareware gem that puts all the commercial programs to shame.

About the only area BobTerm performs poorly is when you're connected to a mainframe that requires the KERMIT protocol, such as the DEC VAX-VMS systems often found at universities, corporations, or government agencies with ties to the Internet. The best software for those systems is still John Dunning's KERMIT 3.7 which operates up to 9600 baud. If only there were a KERMIT protocol and reliable 80-column VT-100 emulator for BobTerm, then BobTerm would truly be the all-in-one terminal program. -BP]





The Garret

Text Adventures

Ed Hall, AC Staff Columnist

Once There Was A Colossal Cave...

It was discovered by two guys named Crowther and Woods, and for awhile it was a very popular spot, being full of adventure and profit. Then a curious malaise set in, and the cave became a dusty, seldom-visited place. Eventually it was made an historic site, and a small plaque was placed at the entrance. Unfortunately a great controversy ensued, for some thought the plaque should contain only text, while others wanted graphics as well.

So What Happened?

In its day, people played Zork as compulsively as Pacman, and most of the larger game companies had at least one text adventure in their line-up. But while other games steadily improved, text adventures didn't; they lost their appeal and were finally shouldered aside by RPG's (role-playing games). The three companies most closely associated with text adventures (Scott Adams, Infocom, and Level 9) either stopped producing them or folded up entirely.

To learn why, we must first get a clear understanding of what a text adventure is, and what it is not, and this involves shedding some of the hyperbole spouted by the game companies. The crew at Infocom billed themselves as "master story tellers" and Synapse/Broderbund called their product "electronic novels."

Not!

Text adventures have always been games first, fiction second. Their use of the three essential elements of a story (plot, setting, and character) is usually minimal. Most text adventures are little more than a collection of puzzles tied together by a storyline.

There is, of course, a very good reason for this approach. Text adventures can't compete with ordinary works of fiction in two key areas: price and user-friendliness. Reading lots of text is easier on a page than a computer screen, and a paperback is significantly cheaper than a software title. In order to succeed, text adventures have to offer something that books can't, and that "something" is interactivity.

Now, there are many ways to "interact" with a program, but the area that came to dominate text adventures was the puzzle. It offered a challenge to the user that books didn't have, and drew out the length of time it took to reach the end. Thus, one of the measures of a good adventure was the length of time it took to complete it. If it could be finished in a single night, it was usually considered substandard. (Not a complaint you'd ever hear about a paperback.) Unfortunately, the puzzles often had illogical solutions, and the novelty of puzzle-solving eventually wore off.

Scott Adams was convinced that the future of text adventures lay in the incorporation of graphics, and struck up a deal that seemed a sure-fire winner: a line of illustrated text adventures based on comic book characters. The deal was with Marvel Comics, and three programs were produced, including Spiderman, the Hulk, and the Fantastic Four. It was a brave attempt, but it came just at the time of the great videogame/computer recession in 1983-4, and the line faded away, as did Scott Adams.

Infocom, Of Course

The most innovative producer of text adventures was Infocom. Its parser (a program or routine which recognizes words) was one of the best; its text was literate and humorous; its packaging was inventive; and its range of games covered just about every genre: mystery, horror, romance, humor, and science fiction. The company attracted a best-selling novelist to its ranks (Douglas Adams), and it continually explored new avenues in the field. But eventually even mighty Infocom bit the dust.

It was a sad event. When it happened, I remember thinking back to a survey conducted in Infocom's newsletter, The Status Line (originally the New Zork Times), which asked the question, "How can we improve our games?" To me, the answer seemed obvious, and was far more crucial than the dispute over graphics: improve the parser. Though Infocom's was often praised, there was still much room for improvement.

It was advice which could have been applied to all producers of text adventures. How many times in a game have you run into a situation like this?

THE ROOM IS SPARSELY FURNISHED.
ON THE WALL IS A PAINTING.
>Examine furniture
I DON'T KNOW WHAT A FURNITURE IS.
>Examine painting
YOU CAN'T.

When it happens often enough, you begin to lose interest.

At first this situation was due to hardware limitations. It just wasn't possible to pack in a vocabulary large enough to handle all the situations and responses that could arise in a program; and even if it could have been done, processing speed was likely not up to the task. But that was five years ago. Imagine what kind of text adventure could be implemented on current machines. Throw in some artificial intelligence and a 50,000-word vocabulary, and you'd get some pretty decent interactive fiction. Try this:

>Examine furniture

TOO LATE, SOMEONE'S COMING UP THE STAIRS.

>Hide

ANY PLACE IN PARTICULAR?

>Pick the best spot

BEHIND THE DOOR THEN.

One of these days, someone's going to come out with a killer text adventure.

Tired Old Stuff

Sure, you say, that's fine for folks with 486 machines and CD-ROM drives, but what about us poor 8-bitters? Are we doomed forever to substandard fare? Not at all. I think interesting text adventures for our machines are still possible; it's just a matter of getting out of the rut we've fallen into. For example, aren't you getting a little tired of fighting demons, wizards, and trolls? For me, these characters have worn out their welcome. If you're thinking about doing a text adventure, and feel that you absolutely *must* use these cliches, then at least try to bring something fresh to them, the way Level 9 did with Knight Orc, which cast the player not in the usual heroic role but as that of a despised orc.

Likewise with pointless mazes and stupid puzzles. These are *not* essential elements of a text adventure: we've just been brainwashed into thinking so. Why not try some innovations in story-telling technique? Here are a few suggestions to get you thinking.

New Blood

Back in the late '60s science fiction was revitalized by a movement which became known as the New Wave. This movement had existential roots, and resulted in stories with very strange titles and some interesting technical innovations. A British author named J.G. Ballard began writing stories known as "condensed novels." They were very odd, often consisting of paragraphs which seemed to have been lifted out of a longer story, shuffled, and placed on the page in a rather arbitrary order. The computer, it seems to me, makes an ideal place to pursue this sort of non-linear approach to fiction. (By the way, it was Ballard who later wrote the semi-autobiographical "Empire of the Sun," from which came the movie of the same title.)

Many years ago I came across an experimental novel which had no beginning and no end. You opened up the book and started anywhere. Plotwise, the last chapter preceded the first chapter. This sort of thing could be carried off more elegantly on a computer than on paper.

Or, what about a story in which players could instantly change their point of view from one character to another? You can't do that on paper! If some of these ideas sound a bit too far-out for the average text adventure, good! We don't need any more average text adventures. The old corpse needs new blood.

Still More

There are other, less avant-garde possibilities. I'm thinking in particular of a type of book sometimes known as a choose-your-own-adventure. It consists of page after page of numbered chunks of text. At the end of each passage you're given a decision (e.g. turn left or turn right), and then referred to a number. In this fashion you follow a particular plotline through to its end, which may be short or long, and conclude in success or failure.

Not only could a computer handle this form of fiction more efficiently (by removing the need for constantly flipping through pages), but also the programming would be dead easy: a simple branching affair with no parser required.

Vaporware Revivals

Or, why not try out some interesting techniques used in games which never made it to Atari 8-bits? Here are some titles that never migrated to the Atari 8-bit game market:

Nine Princes in Amber - This is an illustrated text adventure based on the novel of the same name by one of my favorite writers, Roger Zelazny. Touted as a game of negotiation, politics and intrigue, it has 40 possible endings, depending on the alliances you form.

Portal - This unusual program consists of 11 databases that must be explored to find out what happened to Earth's population, which has vanished without a trace.

Bureaucracy - This was Douglas Adams's second game, after his successful Hitchhiker's Guide to the Galaxy. I've never played it, but the idea seems absolutely inspired: what better place for mazes, puzzles and baffling obstacles than a bureaucratic setting?

Border Zone - Two different ideas in this spy thriller. First of all the game is played in real time, which adds a sense of urgency. Secondly, the game is broken up into three different parts, with the player taking the role of a different character in each part.

Bert & Nord - This release consists of eight short stories which use word play (puns, homonymns, spoonerisms, etc.) as the central conceit.

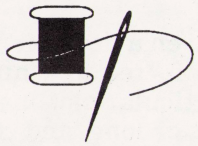
Though none of these games ever made it to our platform, and all but Bureaucracy received less than favorable reviews, I applaud their experiments. Why not try them out in your own text adventure? What's that? You've always wanted to write one, but don't know spit about programming? No problem. Next issue we'll look at resources and tools you can use. [Editor's Note: Why wait till next issue? Check out Ron Fetzer's "Modular Programming" feature elsewhere in this issue for a jump-start on BASIC programming. -BLP]

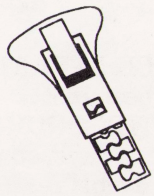
Whatever Happened To...

Several years ago Covox advertised in ANTIC a text adventure called Escape from Planet X. The game was controlled with voice commands, apparently through the use of their VoiceMaster Junior hardware. However, despite the advertisement, the game may have been vaporware. Anyone know whether or not it actually came out?

And Nat Friedland, in one of his last editorials in ANTIC, mentioned "a vast sequel to the original Text Adventure game." Anyone know what happened to it?

Till next time...





The Fitting Room

Second Childhood

Mike Jewison, AC Staff Columnist

Seasons Misaligned?

I wonder if the headshrinkers have ever done a study on how external events in your life can affect your biological clock. I mean, here we are approaching the Summer Solstice, and I'm thinking about Christmas! I love Christmas. Can't really explain why. Maybe it's the joy in our kids' faces as they rip open a new gift (which I then play with as they're more often fascinated by the box in which it came), or it might be the joy in my face as I unwrap a new little trinket for my family of computers. Truth is, I've always loved Christmas, even as a little kid. Of course, growing up on the Canadian prairies may have had something to do with that. When the temperature gets down to -30, you look for *anything* to take your mind off the weather!

The month or so leading up to Christmas was always a time of unbridled anticipation around our house. My sister and I would put in our requests for presents and then wait. And wait. And wait. We always had a sixth sense about when Mum and Dad would go out shopping for our things, and we also knew all their favorite hiding places. (At least we like to think we did!) Once we were sure the booty was safely in the house we would switch into our Sherlock Holmes personae and search the premises until the goods were located (making sure, of course, that Mum and Dad never suspected a thing). There is nothing worse for a nine-year-old than to find, in your house, the toy that has been the center of your world for months, knowing that you can't play with it, can't touch it, can't even acknowledge its existence for another three weeks until Christmas.

It was pure torture, but I continued to do it year after year after year. Once I hit adulthood (assuming I'm there now, that is) I was determined never to place myself in that sort of situation again. It would seem I was only kidding myself.

Ghost of Christmas Past

It is said that the only difference between men and boys is the size of their toys. In my case, it's not so much a question of size as price. When you're nine, it seems to take forever to save up the $20 to buy the toy of your dreams; the same holds true when you're 33 except that the cost of the "toy" in question has risen to $200. But if you scrimp and save (and if your parents give you money for your birthday) you can finally go out and buy that prized trinket, just as I have. I finally did it. I bought a Black Box.

To my mind, the Black Box (which I'll refer to as the BB) is the Cadillac of Atari 8-bit peripherals. The board plugs into the PBI/ECI port on the XL/XE computers and gives you a SCSI port which can support virtually any SCSI hard drive, an RS-232 serial port, and a Centronics parallel port. With the addition of the Floppy Board, you can add up to four industry-standard floppy drives capable of operating at parallel bus speeds. The BB also boasts UltraSpeed disk I/O which can increase disk access for the XF-551 and modified 1050 and 810 drives, as well as a built-in machine language monitor which can be used to examine and manipulate any program in memory. It truly is a remarkable piece of hardware.

The first thing I did upon receipt of the package, needless to say, was tear it apart, plug the BB into the computer and power everything up. The BB has two LEDs, a power indicator and a busy light. The power LED should illuminate whenever the BB is plugged into the line AC. Mine didn't. Thinking that the transformer for the BB wasn't properly inserted into the outlet, I fiddled with it for a few seconds at which point the LED flickered to life - and promptly died as soon as I removed my hand from the transformer. I grabbed a nearby multimeter and checked the voltages coming from the BB power supply. The +5V line was putting out a shade over +3V and the +12V line was registering in the +8.5V vicinity. I sat staring in disbelief at the readings on the multimeter display. I had a defective power supply; my Black Box wouldn't work.

I quickly placed a phone call to Computer Software Services. Unfortunately Bob Puff, the owner of CSS (and *AC's* Technical Consultant), wasn't in, but he did return my call later that same day. After describing the problem to Bob, he agreed with my diagnosis and promised to ship off a new power supply right away.

Since the BB had originally arrived about a week and a half after I had ordered it, I assumed the replacement power supply would take the same amount of time. By the end of the second week after I'd talked to Bob I still had no new power supply; I figured it was time to check and see what was happening. Much to my dismay, it turned out CSS had no record my ever requesting a replacement for the defective power supply. They promised to ship one immediately; it arrived about a week and a half later.

You often hear stories about drug addicts who, years after they've kicked their habit, have flashbacks brought about by their drug abuse years before. A form of that had just happened to me: for three weeks I was nine years old again. In my hands I had this peripheral (I'll refrain from calling it a "toy") which had been the center of my world for months, and I couldn't play with it, couldn't touch it, and didn't dare even acknowledge its existence; the depression would have been too great. I decided then, at least until I received the new power supply, I needed a diversion.

Case Closed

If you haven't been following my upgrade adventures since the beginning (and why not???), let me refresh your

memory. My main hacking computer is an 800XL motherboard which resides in an old, trashy PC case I scrounged from the junk pile at my place of employment. To that motherboard, I've added a PC-style keyboard and TransKey adapter (from DataQue software), the UltraSpeed+, a replacement operating system for the XL/XE computers (from CSS), and a 256K memory upgrade from Best Electronics. All of this sits inside the PC case, powered by a PC power supply. My intention was to mount the BB inside the PC case with the XL board and hopefully have some room left over for other goodies down the road, like some floppy drives or a hard disk.

The case I had, however, was poorly suited for my purposes. The drive cage was welded into place; I needed something removable. The power supply was rated at a paltry 65W, I figured I needed at least 100W. And, worst of all, the BB wouldn't fit inside the case without major use of a hacksaw (to the case, not the BB! Sheesh.) In short, I needed a new case.

One would think that finding a suitable computer case would be a simple matter. Not so! I spent the better part of two weeks searching most of the shops in Toronto looking for that "perfect fit". My mistake was checking places that sold new IBM-clone equipment; I finally found the case I was after (it's an AT-style case with room for four drives) in a surplus store for the miserly sum of $10. At the same time, I picked up a new 150W AT-style power supply for $35.

When I got home, I gutted the old PC case and set it and the old power supply aside. I then placed my XL motherboard on the bottom of the new case, marked the location of about seven of its mounting holes, removed the board, and drilled the holes through the bottom of the case. I then used a number of circuit board spacers to fix the XL board into position inside the case.

Of course, when the case is closed there is no access to any of the ports on the XL. If I wanted to use the monitor port, joysticks, RF output, or even my TransKey board I needed to somehow bring all these ports outside the PC case.

The joysticks were easy. I got one of those joystick extension cables from Radio Shack, cut it in half, and soldered chassis mount, 9-pin connectors to the cable ends. I was able to borrow a DB-9 chassis punch from work to knock out two holes for these connectors in the lower front corner of the PC case (just below the drive bays). I screwed the connectors into place, plugged the other ends into the joyports on the XL board and- voila! Now I can plug in the joysticks without having to fumble around inside the case.

I used much the same principle for the composite video; I built a short extension cable which plugs into the appropriate jack on the XL board and terminates with a jack I mounted on the rear of the PC case. I punched out a second hole in the back of the case for the TransKey jack which, like the monitor output, is a 5-pin DIN connector. I still needed to bring out the cartridge and SIO ports, but by this time the replacement power supply for the BB had arrived and I was somewhat anxious to try it out.

The new PS performed flawlessly. It was a lot of fun to get into the BB's menu and poke around in memory with the 6502 monitor which, unfortunately, was all I had time to do.

Woe Is Me...

Part of the problem when you have a small family (our kids are 4 and 2 years old) is that there is very little opportunity for you to get some quality time to yourself. (Jeff McWilliams alluded to that way back in our first issue.) I'm no different. By the time I had punched and drilled all the holes in my new PC case and finally set everything up, I had run out of personal time.

I didn't have any opportunity to check out the various functions of the BB. I don't have a spare SCSI hard disk lying around, nor am I likely to be able to afford one in the next little while. I do have a modem and printer, but had no opportunity to experiment with them and the BB, particularly since my Atari equipment is on a different floor from the rest of my stuff. Some day I'll have to make the time to play with all this nifty hardware I've accumulated. If I'm real lucky it'll happen before the kids are in university.

I therefore decided my next project in this continuing saga will have to be something which is neither expensive (like a hard disk) nor time-consuming (like moving most of my computer peripherals down two floors). While poking around in my junk pile, looking for ideas, I happened across a bare 360k floppy drive which I forgot I had. Hmmm. Black Box. Floppy drive. Black Box. Floppy drive. Hmmmmm....

Guess what I'm gonna get next?

Products Mentioned:
Black Box
Computer Software Services
PO Box 17660
Rochester, New York 14617
(716) 429-5639
Price: $199.95

About the author: Mike Jewison is an astronomer by training and a computer hacker by accident. If you have any comments or suggestions regarding upgrades or other packages he might like to try on for size (on his computer, that is), he can be reached on the Internet (mjewison@nereid.sal.ists.ca), GEnie (M.JEWISON), and CompuServe (70117,1130). If you have no on-line access, you can always try snail-mail: Mike Jewison, The Fitting Room, Atari Classics, 382 Vanden Bergh Blvd., Newmarket, Ontario, Canada L3Y 8A1.

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Saga of the AC Database, Part 1

Ben Poehland, Circulation Editor

It had been my intention to insert a brief note in this issue giving some info to readers about their subscriptions. Having just completed processing a batch of subscription orders, however, I decided to expand the short notice into an article which not only includes useful information on your *AC* subscription, but also provides an example of how our supposedly obsolete 8-bit computers are productively employed in a business environment.

Good News Everywhere!

In the April *AC* our Managing Editor delivered a missive in which it was hinted it might be necessary for *AC* to drop its August issue due to being undersubscribed. I'm happy to report that as of this writing (May 1) *AC* is now up to 475 paid subscribers and will probably reach or exceed its mandated subscriber base of 500 by the time this issue is mailed out. Consequently, our Managing Editor (who also happens to be me, no wonder I'm always muttering to myself!) has decided to pursue the full bimonthly publication schedule (6 issues) originally proposed for 1993.

And, for good measure, over the summer we hope to pursue the Postal Service's holiest prize: a 2nd Class mailing permit. Yes, the prospect of reliable mail delivery is within sight at last. This magazine has successfully weathered a rough winter; the advent of Spring sees us not only alive and kicking but continuing to grow. As I focus my gaze upon the impenetrable mist of our collective future, my mood is one of increasing optimism. When I compare how far we've come since the dark days of 1991 (the year *Antic* died, Atari Corp. and ICD dumped us, the community was deeply divided over its future, and the present Editorial Offices of *AC* were a partly charred ruin with wind whistling through holes chopped in the walls by firemen), I cannot but feel a growing sense that the hemorrhaging of our battered community has finally begun to cease. Never have the prospects for the continued existence of this magazine-and the user community that courageously supports it-been so bright.

We even have some good news for our vendors. Beginnning with the August issue, *AC* is offering substantially reduced commercial ad rates. By so doing, perhaps we'll lure a few more reluctant vendors into advertising those hidden 8-bit gems we're all starving for. And the vendors who've supported us through our first three issues cannot fail to be delighted at the prospect of paying less for their ads even while *AC* fetches up an increasing number of readers.

Sub Tweaks

Take a look at your mailing label. Beginning with the April issue, I began a process of subtly re-vamping and improving *AC's* subscription database and the printing of our mailing labels, which should be completed by the June issue. Abbreviations in addresses have been substantially eliminated, making the address easier for the postman to read. And, you'll notice a four-digit number has been added in the upper right-hand corner of the label.

For most of you, that number is 1093. It's the date code of the last issue in your subscription; i.e., the last issue you'll receive in your present subscription if you don't renew. So 1093 means October 1993; 1293 means December 1993, and so on. Henceforth you'll always be able to glance at your label and see exactly when your subscription runs out.

I plan to send out renewal notices about a month before your subscription expires. For subscribers with a date code other than 1093, I'll send out the renewals myself. However, the "1093" subscribers constitute about 75% of our mailing list- almost 400 addresses-which is too big a job for me to handle alone. Over the summer I'll be exploring ways of solving that problem. Don't be surprised if, sometime in September, you open your mail and find a form letter that begins, "Dear *AC* Subscriber, the final issue of your subscription is already in the mail. Enclosed please find a renewal subscription form...".

I'm also phasing out phone-in credit card orders to Unicorn Publications, as too many errors occurred in the transfer of data. You call up Unicorn to place your phone order, and during that transaction you might either inadvertently give incorrect information or they might not hear you well and record your information incorrectly. They then have to transfer that information to me, and once again the opportuniy arises for one or both parties to make a transcription error. All subscription orders must now be placed in writing, preferably using our handy-dandy form printed in the back of the magazine.

Sub Processing

I've received a fair amount of feedback from readers reflecting some curiosity over how their subscriptions are processed. As the magazine has grown, and we've also begun publishing our Software Disk, the actual entry of a new subscription order has become a complicated process.

Back in November and December of '92, when subscription orders were coming in by torrents, I spent several days a week processing subscriptions. Now, with new orders coming in at the rate of about 25/month, I devote two or three days a month to it. The process begins when I receive your order in the mail and open it. I sort my incoming postal mail into three piles: one pile

for subscription orders, one for magazine correspondence, and one for my personal mail. After 10-20 subscription orders have accumulated, I collect a bunch of large Kraft mailing envelopes and plop myself down in front of my trusty 800XL with envelopes, subscription orders, and an assortment of office tools: a pad of those little yellow post-it papers, a felt pen, a pencil, and a date stamper with ink pad. Then I fire up the 800XL.

Hot-Rod Hardware

OK, this isn't your average 800XL. It's a "hot-rod": 256K RAMBO, Super Video 2.0 upgrade, and current-delimited joystick ports for starters. A custom-modified XEP-80, which draws its power from the computer, is plugged into joystick port B. Connected to the 800XL's parallel bus interface is the latest version 64K Black Box and Floppy Board from Computer Software Services. The BB/FB controls four Teac 1.44-meg 3.5" hi-speed floppy drives on the floppy port and a fan-cooled 44-meg SyQuest removable media hard drive on the SCSI port. These drives are all installed in custom enclosures (the 3.5" floppies fit nicely in pairs in cases that once housed Apple II full-height 5.25" drives). The parallel port on the BB/FB connects to an Epson 24-pin printer.

The video display is a Digital Equipment Rainbow black-and-white monitor with custom video input and power modications to render it compatible wth the Atari. The monitor is connected to both the 800XL and the XEP-80 through an 80-Column Switcher (courtesy of "The 8-Bit Alchemist", formerly of Current Notes) which enables a choice of either the 40-column or 80-column display at the flick of a switch. The SIO port on the 800XL sports an XF551 drive modified with the CSS 1050 Enhancement and Dual 3.5" upgrade, plus an ancient 1025 printer. The whole mess is powered by a monster fan-cooled switching supply and compactly housed in a Sullivan "Swiss Army Desk". I recently added a nice padded office armchair that accomodates my habit of chair-rocking without risk to the delicate parts of my anatomy.

For all general work I boot from the hard drive under SpartaDOS 3.2d, but the magazine's database has been set up with MicroMiser's TurboFile running under SpartaDOS-X and BASIC-XL for maximum efficiency. I boot up in Sparta 3.2d as usual and go into the Black Box menu where I use the EXCHANGE command to swap hard drive partitions. I power down, stick the SDX-BXL totem-pole into the cartridge port, and reboot, switching over to the 80-column display as the machine comes up. This puts me into the TurboFile menu, crisply displayed in hi-rez black-and-white from the XEP-80. Now I'm ready to do some useful work.

Putting It In

I start with the subscription at the top of the pile. I eyeball the check, making sure it's written legibly and bears a signature. Then I look over the form for completeness and to ensure the items selected on the form are consistent with the amount of the check. If the subscription is paid with a credit card, I eyeball the credit card number for the correct number of digits, expiration date, and signature.

The first order of business is to search the database to see if the person is already in there. The database contains not only data for all current subscribers, but also data for all the people who were mailed free copies of *AC's* Premier Issue- I'd guess 2500 records in all. A search on the hard drive takes maybe 15 seconds. If the person's name is found, it means I have someone who has taken a long time making up their mind to subscribe after receiving the December issue. These folks will usually have their subscriptions retroactive to December, and their mailing label will bear the "1093" in the upper right corner. If the search doesn't turn up anything, I know I have a newcomer to the *AC* adventure and proceed to add a new record to the database containing that person's mailing information. Subscriptions for newcomers are begun with whatever issue is current at the time their order was received. After the mailing data has been entered and checked, I use the date stamp and ink pad to stamp onto the form the date when the order was processed.

With the new subscriber's record still displayed on my screen, I reach for one of the large Kraft envelopes and write the subscriber's name and address on it with the felt marker. Then with the pencil I write onto one of the little yellow post-its what will be placed into the envelope for this subscriber. The combinations seem endless: current issue only, current plus disk, current plus last issue, or the whole works beginning from the last year, etc. (There are even a few people who subscribe to the disk but not the magazine, go figure.)

The addressed envelope with its yellow sticker gets tossed onto the table behind me, and I go on to the next order until I've worked my way through the pile. When it's done I close up the database files and shut down the computer. I also end up with three segregated piles of paper: one pile containing all the checks, and the other two piles containing subscription forms separated according to whether they were paid by check or credit card.

The forms of those who paid by check are stuffed into a bulging file folder in roughly chronological order. Photoreduced copies are made of all the checks and credit card order forms. The originals are placed in an envelope that gets mailed off to our Publisher, and the copies get tossed into another bulging folder.

There are several reasons for my keeping a copy of your check or credit card order form. One is to protect the subscriber in the event the package of checks gets lost in the mail on its way to Unicorn. (That hasn't happened yet, but it's a scary thought.) It also makes it fairly easy for me to get back to your original paperwork in the event of a complaint or inquiry (I've been known to make errors entering subscription data at 3AM). And finally, when we apply for that coveted 2nd Class mailing permit, the Postal Service will send an agent to my house... err, to the Editorial Offices of *AC*, to verify the authenticity of the subscription orders.

That means showing them the original order and the copies of the checks. True to the Neanderthal traditions of postal services everywhere, they will care nothing for

my fancy computerized database but will scrutinize the contents of the bulging folders minutely.

Lick, Stick, and Rubber Stamp

Now I turn my attention to the pile of Kraft envelopes on my "mail table", which I quickly sort into three piles according to destination: USA, Canada, and Airmail. My "mail table" has a small rack bearing a whole bunch of custom rubber stamps. I stamp all the envelopes with US addresses with a "domestic" AC return address stamp, and all the Canadian and Airmail envelopes with the "overseas" *AC* return address (which is the same as the domestic one only it has "U.S.A." added). I then give all the airmail envelopes a big red AIRMAIL stamp (in several places for good measure).

Next, I stuff all the envelopes with magazines according to the notes previously made on the yellow post-it stickers. For disk subscriptions, I place the disk in the center of the magazine, fastened with a piece of paper label to hold the disk in place during shipping. Envelopes containing disks get big black MAGNETIC MEDIA and DO NOT BEND stamps.

Calculating the postage for each envelope is about as much fun as a visit to the dentist. I start by weighing each one on an old Ohaus triple-beam chemistry balance that gives me the weight in grams. A quick spin on a hand calculator converts the metric weight to ounces (it turns out my trusty old mechanical balance is more precise than the electronic one used in my local post office!). Now I look up the postage on any of the several large charts of postal rates that adorn the walls of *AC's* Editorial Offices. Postal rates are listed according to the weight in ounces, the class of mail service, and distance it has to travel. To the unititiated these charts are a nightmare; I must confess it took me awhile to sift through the bureaucratic mumbo-jumbo before I learned to use them effectively.

Below 5oz., rates for 1st Class and 3rd Class are the same, so I've learned to eyeball the weight to figure out which chart to use for calculating the postage. At this point I trash the yellow sticker and scribble in its place the weight and amount of postage required according to the chart. Then more rubber stamps are applied according to how the postage caluculation turned out. Those below 5 oz. get a red FIRST CLASS MAIL stamp. Heavier packages go by 3rd Class (it's cheaper), but only certain types of mail (such as printed matter) qualify for 3rd Class, so in addition to a big black THIRD CLASS MAIL stamp I also apply a PRINTED MATTER stamp. There's a cheaper printed matter rate for airmail, too, so those also get a PRINTED MATTER stamp. My wrist is usually sore by the time I finish stamping all these envelopes.

The Bag Man Cometh

I'm not quite ready to stick on the postage stamps yet. The Canadian and airmail stacks have to have Customs stickers applied first. The Customs sticker is a little green form you get from the post office, upon which you have to record a description of the package contents, its value, and its weight. I affix these stickers and write in the weight while it's still visible on the envelope, before it gets covered up with postage stamps.

The ulitmate goal of all this industry- affixing the postage stamps- is almost anticlimax. Yet even here there's an order of priorities. I sort the stack of envelopes in ascending order from cheapest to most expensive postage. The reason for this is that I'm never 100% certain I'll have enough postage on hand to mail everything out, so my policy is always to serve the greatest number of customers with the resources at hand. This insures that if I've only got $10 worth of postage stamps on hand, I'll send out ten $1 packages instead of two $5 ones. If I run out of stamps, the more expensive packages are delayed until my postage supply is replenished by Unicorn. Although I've run out a few times, in general I keep our Publisher appraised of my needs, and they're pretty good about furnishing me the voracious amounts of postage this magazine consumes.

All my effort would be for naught if the mail doesn't make it to the post office. I typically work up subscriptions on a Sunday afternoon, then carry the stuff to the post office the next morning (I pass my local post office every day going to and from work). It's not unusual for me to deliver 40 items of mail to the post office on Monday morning, stuff ranging in size from postcards to large Kraft envelopes stuffed with magazines, weighing 15 or 20 pounds. The first time I took one of these loads to the post office was a disaster. I thought I could carry it all as a stack, but the stack fell apart in my arms and *AC* mail got scattered all over the post office parking lot. Now I've wised up and use shopping bags, those kind with the rope handles like bag ladies have. I'm not sure what other people must think when they see me dragging my shopping bags through the post office, but it works.

Monday Night Religion

The subscriber database is *AC's* single most precious asset. I tremble in stark terror of the cataclysm that would smite our community if the database were ever lost or destroyed. Recovering from such a catastrophe would be equivalent to recovery from a nuclear holocaust. It would take me at least 3 or 4 months to rebuild the database by re-entering all the data by hand from the carefully preserved paper records. But... since some people placed their orders by phone through Unicorn, I have no written record for those folks, and they would be irretrievably lost (another reason for eliminating phone orders!). And virtually all the entries from people who participated in the Mail Campaign of 1992 and the free distribution of the December issue, and didn't subscribe, would also be lost. This magazine would emerge from the cataclysm a skeleton of its former self.

I strive mightily to ensure the Terrible Event never happens. Backing up the database is an activity I've elevated to the status of a religious ritual. The High Rites are typically performed on Monday nights after I arrive home from work, having already mailed out the magazines on my way to work that morning. I boot up my 800XL as usual and open up a subdirectory called

ACLIST on D5:, which is actually a partition on a SyQuest hard drive removable cartridge. The raw database info is contained in 25 files which I copy to a 128K RAMdisk in my 800XL. (One of the things I love about TurboFile is that it stores data as ASCII files you can manipulate with DOS, unlike Data Perfect which encrypts everything.) I reverently close the subdirectory and remove the magnetic cartridge from the drive. Now I'm ready to copy.

I make backups on three different types of media: a SyQuest cartridge, a hi-density (1.44-meg) 3.5" floppy, and a quad-density (720K) 3.5" floppy. The 720K copy provides operational continuity in the event of a catastrophic failure of the Black Box, upon which the hard drive and hi-density floppy drives are dependent. If my BB dies, I can still operate the database from the 720K floppy via the Dual Upgrade XF551 attached to my SIO. (It would be clumsy and slow, but slow is better than *dead.*) For the hard drive backup, I have several spare SyQuest 44-meg magnetic disk carts. These carts have all been formatted and partitioned identically: three partitions of 57,000 sectors each in Sparta format. Copying the RAMdisk files to all three media is a snap. I close up all the subdirectories, mutter some incantations from the great alchemist Paracelsus, and the *AC* database is saved for posterity.

Trial and Terror

It wasn't always this easy. In October 1992, and again in January 1993, events occurred that nearly brought this magazine to its knees. Our "Moonlight Workshop" Columnist, Jeff McWilliams, emerged as the real hero of what we now refer to as the "October Crisis". I'll state it plainly: Jeff saved the magazine.

The October Crisis began just after the launch of *AC* at the 1992 WAACE AtariFest in Reston, Virgina. Unicorn Publication's printer was in possession of 2,000 copies of our December issue, minus a few hundred we handed out at the Fest. Unicorn Publications was pressuring me to send them the mailing labels for the December issue as quickly as possible, as the printer would begin charging us a storage fee if the magazines weren't mailed within 30 days, two weeks of which had already passed. The mass mailing of the December issue required the database to generate mailing labels for the approximately 800 addresses it contained at that time. TurboFile is superbly designed for this sort of job, but unfortunately the database itself wasn't.

The present *AC* subscriber list began life in late 1991 when Jeff McWilliams created it for his Mail Campaign. His requirements being fairly simple, he set it up with six data entry fields (name, address, postal code, counter, etc.). After the Campaign he turned it over to me, and I naively assumed I would just continue to add to it as the magazine grew. But mailing list requirements for the magazine turned out to be far more demanding than they had been for Jeff's Mail Campaign. I was appalled when Pattie Rayl informed me we'd have to furnish the printed labels sorted according to Zip Code, with foreign and airmail labels sorted and

printed separately. Further, we had to distinguish disk subscribers from non-disk subscribers and generate a separate mailing list for them. Not to mention generating a bimonthly mailing label list for subscription renewals notices. These additional demands required a total of 12 data entry fields per record instead of Jeff's original 6. But TurboFile has no provision for adding new fields once you've created the database.

Never Say Die!

I faced the prospect of having to re-create the database all over again from scratch, incorporating the 12 data entry fields and re-entering the data for all 800 records. It was horrible. I knew it would take a month or more to accomplish, delaying the launch of *AC* probably well into 1993 and incurring charges for storage fees when we had practically no money in the bank. We would go bankrupt. I saw everything we had worked for going down in flames because of this stupid problem. Doom and gloom were the order of the day.

Then, like the U.S. Cavalry charging to the rescue in the nick of time in a Wild West movie, Jeff McWilliams came swooping in to save everything. He wrote a little program that modified TurboFile, forcing it to add six more fields to the existing format and resaving the old data to the expanded format. In two terrible nerve-wracked evenings we were able to accomplish what would have taken a month or more to do by hand. A few days later he walked me through the intricacies of TurboFile's printout routines, and the 800 mailing labels for *AC's* first mass mailout were finally delivered just a before the expiration of the 30-day period. Everyone reading this magazine today owes Jeff McWilliams a silent debt of gratitude. I can never forget that at a moment when I had given in to despair, this man came forward with a sparkling display of the "Never Say Die" philosophy that constitues the most noble tradition of our community.

[Next Time: Ben relates in Part 2 how the database narrowly escapes destruction at the hands of the Hard Drive Demons, and bestows blessings upon the lowly 1025 printer.]

Super Data Base 1-2-3

Review by Rolly Herman

[AC expresses its appreciation for permission to reprint this review from the WAND Newsletter, May 1989.]

Not Your Normal Database

From the title- Super Data Base 1-2-3 (henceforth called SDB)- you could assume this is another database program, right? Well, yes and no. SDB isn't a database program in itself. It's really a trilogy of programs which write the code to create databases, reports, and menus which then become self contained and operate without SDB. When you're finished using SDB, you have created one or more data base and report and menu programs which you use. SDB is put away and not used again until you have the need for some new custom data base program. SDB comes on three double-sided (flippy) disks accompanied by a very nice manual over 135 pages long. It's produced by I.M.P. Software, of Ozark, Missouri (USA), and costs $59.95 from American TechnaVision (see ATV's ad elsewhere in this issue).

Here's an inventory of the contents of the three disks:

```
Disk 1, Side A is entitled File Writer Data Entry System.
Disk 1, Side B is Menu Writer and Menu Creation System.
Disk 2, Sides A and B are Report Writer and Report Creation System.
Disk 3, Side A is a Tutorial for Super Base 1-2-3.
Disk 3, Side B is Addendum, Notes, and Screen Layouts.
```

This all looked quite impressive, but somehow it also looked vaguely familiar.

I delved into the manual, and again some parts looked familiar and others did not. Had I seen this somewhere before?

Deja-Vue From Commodore

I finally figured out the answer to the puzzle. SDB is a new title, and I.M.P. is the new owner of an older program that has been partially revised, reworked, and enhanced. *[Editor's Note: I.M.P. stands for Industrial Machine Products, not exactly the name of a company you'd associate with computer software. Maybe the market for locomotive drivewheels and journals got a little too slow, so they diversified into Atari 8-bit software. Who knows? Stanger things have happened! -BP]* The manual has been partially revised and enhanced, and partly rewritten. SDB is a reworking of Codewriter.

CodeWriter originally came on flippy disks for the Commodore: Commodore on one side, Atari on the other. The original manual was terrible, because it was written for the Commodore and had asterisks all over the place to note changes for the Atari. It was full of mistakes, omissions, directions unworkable on the Atari, etc. The Report section was so bad that it was practically useless. In this new version, the manual has been revised so that it is for Atari only, and the Report section has been completely rewritten.

SDB is a three-part program which allows the user to design his own databases, design his own report systems, and his own menus. SDB will actually write the code in BASIC for the new programs which will then run and be independent of SDB. With the use of SDB, a user can create custom databases and reports for payables and receivables, sales analysis, mailing lists, customer and personnel files, invoicing, inventory, production tracking, order entry, and other business uses. Disk #3 has 26 ready-made screens of sample and typical records you can use outright or custom-modify to your application.

File Writer

Here are some of the specifications of the File Writer program: Allow Screen heading, field descriptions, reminders, notes, and complete editing. Fields can be "numeric" or "money-type" and can be included in calculations. There's a choice of keyboard entered, program calculated, date and grand total (global) fields. A maximum of 50 fields per record, and 500 records per file (depending upon record length) is available. Full data validation is permitted. Key fields and search of records are supported.

Report Writer

The Report Writer program supports these specifications and more. Here's a sampling: a 40 column screen scrollable horizontally to 80 columns and vertically to 56 lines. A maximum of 99 reports, each may consist of up to 15 sections. Output to screen or printer (Atari or Epson Compatible). You have the option of section and/or overall summaries, and summaries may include totals, averages, maximum and minimum values for "money" or "numeric" fields; grand total fields may be included in the summaries. Data-entry fields may be included in the reports and additional program calculated fields are supported.

Reports are designed on the screen; up to 16 records may be printed across the page. Supports address labels, pay slips, advice notes, even checks. You have the options of entering text, including dates, page numbers, report titles and headings. Rapid sorting before printing of any selected field is permitted. There's a comprehensive selection routine for choosing records to be included in, or excluded from, the reports. You also have the option of using different names, numbers, and dates to select records for printing on each occasion the program is run.

Menu Writer

Here are just a few of the things you can do with SDB's Menu Writer module. A main menu and submenus may be created and linked with a 21 maximum. Other features are a three line title, editing, adding/ deleting programs, changing the order, a copy routine to collect files on a new disk. Additional options are permitted such as; Format Disk, Exit to BASIC, Exit to DOS, Directory, Return to Main Menu, etc.

The overall specifications and capabilities of SDB are quite impressive. The programs work well and do create the new data bases, report programs and menus as detailed. The creation of the new programs is fairly rapid- about five minutes. These are created in BASIC, and the program lines are listed on the screen and can be printed out.

Nits And Stuff

I liked the fact that the completed File Writer screens can be saved, edited, reused, modified, etc. and that Disk #3 has the 26 sample File Writer screens you can use. This allows creating an unlimited number of different data bases each custom tailored for a particular use. However, I was greatly annoyed by the fact that the report screen format you've created can't be saved, edited and modified once it has been finished and codified. The report you create on the screen can be edited as much as you like while you're working on it, but when it's finished iy gets directly translated into the BASIC code for your new Report program. If you find that when you now run this Report program, you aren't satisfied with the way the report comes out, or there are mistakes you made, there's no way to just load the report back onto the screen and edit it. You have to go through the entire process of creating a new report from scratch.

There are still a few minor errors in the manual, some of which are noted on Disk #3 in Notes and Addendums. Others, such as certain formulas that only work with upper case and the manual shows it in lower case, are reasonably self evident. I also found a "bug" in running the newly created report program. There's an option to print out a test page before the final hardcopy. The test page didn't work, but the final hard copy was fine.

All in all, everything else works quite well. If you have need of one or more tailor-made database and report programs, you would do well to purchase SDB. At $59.95 it's a little expensive as 8-bit software goes, but for what you get I think it's a fair price.

[Editor's Comment: I briefly evaluated Super Database 1-2-3 last year when I was trying to decide which database would be best to use for AC's subscriber list. One of the traps I fell into with File Writer is that when you're creating your database file you have to tell File Writer how many records you'll be putting into it (so it can calculate whether you'll have sufficient disk space). I already had 800 records and had no idea how many more I'd be adding. There was also no way to port them into SDB from the TurboFile database originally created by Jeff McWilliams. Nevertheless I was much impressed by the enormous flexibility of SDB, especially for small business management for which it was obviously designed. The SDB program disks aren't protected, so it should theoretically be possible to run SDB from a hard drive or RAMdisk. It would be very interesting to get some reader feedback as to compatibility of SDB with different DOS's, RAMdisk utilities, and hard drives. Anybody...? -BP]

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Exploring The Wild FONTier

by David Richardson
AC Staff Columnist

This column is not the result of the desktop publishing of Unicorn Publications. It was printed entirely by a program called Daisy Dot III, a print processor. The printer used was a Star NX-1000, and the DOS was SpartaDos 3.2d. A camera-ready copy was sent to the publishers and they then inserted it directly into the magazine. DD3 is a shareware program. See the information at the end of this article if you are interested in acquiring DD3.

In the two previous Wild Fontier articles, I talked about how to design or modify fonts, and how to do double column printing. Now I'd like to let you know just exactly what features that DD3 has, how to implement those features, what problems you are likely to encounter, and how to deal with those problems.

The first thing to remember is that the backslash is DD3's delimiter. That is, DD3 recognizes the backslash as a signal that a formatting command is following. As an example, the \J command is the justification toggle. Even though \J consists of 2 characters, they will not be printed and will not figure into the spacing. The same is true with any DD3 command. Now, let's go through DD3's features.

Hard Choices

DD3 gives you the option of having a hard space if you want. This is when you have a space between two words, and you don't want them to be on separate lines. You simply insert a hard space between two words and the two words will be treated as one, but there will still be a space between them when printed out. Whenever you want a hard space, simply insert a backslash before each space that you want to be a hard one. DD3 also allows hard hyphens. DD3 automatically uses soft hyphens. If you have a hyphenated word in your text, such as "Daisy-Dot", and the hyphen just happens to be right on the margin, DD3 automatically breaks the word into two parts at the hyphen if both will not fit on the line. If you do NOT want the words broken up, then you must use a hard hyphen. Just as in the case of the hard space, simply insert a backslash before every hyphen you wish to be a hard one.

All Mixed Up

DD3 will allow you to mix fonts on the same line:

Atari Classics Magazine

To do this, simply use the change font command, \F followed by the name of the font, and then type another backslash after the last letter in the font name. The font change command is the only DD3 command that requires two backslashes, the first one, in the \F, the second one at the end of the font name. Here is what the above example actually looked like as it was typed in the text file:

```
\Fplain\Atari \Fcentury\Classics \Fswiss\Magazine\Fplain\
```

Of course, the mixing of fonts looks best if the fonts are all the same height. The font change command is legal anywhere.

Manipulating Text

DD3 allows text to be block left, block right, or centered. The respective commands are \L, \R or \C. All three of the block commands are legal anywhere. There is one thing to remember about the centering command. The text is centered according to the total width of the page as it was set during the customization of DD3 when you first run DD3. There is no easy way to change this. Actually, there is NO way to change it, but there is a rather complicated way to simulate the \C command by using the tabs, but I'll cover that when I get to the tabs. The justification command mentioned earlier, \J, is legal after a hard RETURN, or it can be anywhere in the first line of a file before the first character to be printed as text on that line. Another rather simple command is the underline command, \U. Like the justification command, the underline command is a toggle. Unlike the justification command, it is legal anywhere.

Another command is the width command, \W. This command will take whatever text you are printing and change the width. DD3 expects a number, 1 through 4, after the \W. Here is a small sample of what it will do:

Dave Dave Dave Dave

Here is the text for the above example:

```
\W1Dave \W2Dave \W3Dave \W4Dave
```

The width command is legal anywhere.

Another command is the character spacing command. This command changes the number of blank dot-columns printed between characters. After the character spacing command, \S, DD3 expects to find one more character to determine the amount of spacing. This character is either a number, 0 through 9, or, if you want a higher value than 9, use the letters A through J for the values of 10 through 19. Here is a sample of what you can do with the spacing command:

a b c d e f g h i j k l m n

Here is the text for the above example:

```
\S0a\S1b\S2c\S3d\S4e\S5f\S6g\S7h\S8i\S9j\SAk\SBl\SCm\SDn
```

The character spacing command is legal anywhere.

Yet another command is the graphic density command. If your printer supports different densities, then use this command, \D. After the \D, DD3 expects to find either a D, L, or H, which stand for draft, low, or high. Here is an example of each:

Draft
Low
High

The density command is legal in a new line after a hard RETURN, or in the first line of a file, before the first character to be printed as text on that line.

One thing to remember about the density command is that if the density is set at high, it will not work if your printed page width is more than 6", or, to put it another way, the left margin and the right margin added together must be at least 2 inches. The only reason the column you are now reading is in high density even though the margins add up to less than 2

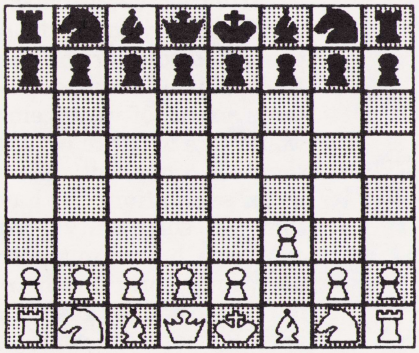
inches, is because if you recall the Wild Fontier article from the last issue dealing with double column printing, each column is in reality a separate page, thereby making it possible to create the illusion of a wider page. Speaking of margins, the command for setting the left and right margins is pretty straight forward. The command for the left is \XL, while the command for the right is \XR. In both cases, DD3 then expects to find a three digit number after the command. These three digits represent the number of one-fortieths of an inch for their respective margins. Thus a value of 120 is 120 fortieths of an inch, or three inches. Numbers of a value of 99 or less should have a 0 in front of them, because there MUST be three digits. Thus, a value of 020 would be 20 fortieths of an inch, or one-half of an inch. If no margin is desired, then a value of 000 must be entered. Both commands are legal in a new line after a hard RETURN, or anywhere in the first line of a file, before the first character to be printed as text on that line.

The next thing to talk about is how DD3 handles tabs and indentions, but that is pretty involved, and I'll save it for next time, along with explaining DD3's other features. For now, I'd like to tell you about my User's Guide to DD3.

Good Help Is Cheap

The documentation that comes with DD3 is pretty good, but it falls short of letting the reader know the extent to which DD3 can be used. It is more of a technical manual than a guide. I found that I kept running into problems which the documentation addressed, but only minimally. For my own use, I created a User's Guide. The first thing I did was I printed out all of the characters of each font that comes with DD3, so that I'd know what they all looked like. If I knew who created the font, I gave their name as creator of the font. If there was anything about the font that I felt was important to know, I'd include a little bit of information about it. The first nine pages of the guide covers the fifty fonts that come with DD3. The rest of the guide covers another 60 fonts that I either created myself, or received from other people. The guide also includes a title page, authors notes from me, and a table of contents listing all of the fonts alphabetically, and also which page to find the font on. Here is but a few examples of the fonts available that do not come with DD3:

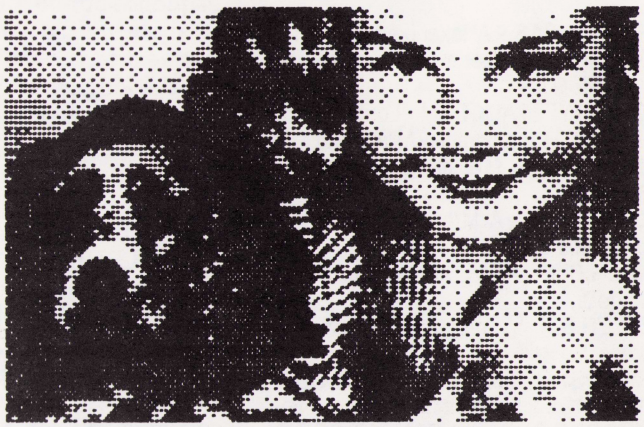
CHESS.NLQ:



HANDSIGN.NLQ:

CHRCHILL.NLQ:

GRLNDOGS.NLQ:



Other fonts include Braille, Morse Code, Yahtzee, Crosswords, Print Shop Icons, Microscreens, etc. There is also a print preview program that will allow you to see a graphic representation of a page to be printed. At the moment, it only works with SpartaDos. Also included on the disks are all of the DD3 utilities that I have acquired. The User's Guide is presently 47 pages long. It is available on disk if you want it. You will need DD3 to print it out. If you would like to get my User's Guide, send 5 double sided disks formatted in single density, or 3 double sided disks formatted in double density. Please format the disks in Atari format or Sparta format before you send them, that way they will be formatted with the DOS and density you want, and also so that I won't be wasting my time formatting them, and it will save wear and tear on my drives. The disks will contain all of the text files necessary to print the guide, and they will also contain all of the fonts available, about 110 of them. I consider the disks Public Domain. All I ask is that you send enough money to cover postage. Most people send five dollars.

David Richardson
P.O. Box 746
Lawrence, KS 66044
(913) 843-5213

To get DD3, send $25 to:

Roy Goldman
2440 South Jasmine
Denver, CO 80222

AC Software Disk Index: June 1993

Steve Hoffee, AC Disk Editor

With the arrival of the second disk issue we have a potpourri of programs for you. As usual, included on the disk are all the type-in programs from our April '93 issue as well as this issue. We also have some great programs that would be too difficult to type in from a listing in the magazine. The following is a list of the disk contents:

Side A

ENVELOPE.BAS - A tokenized version of Ron Fetzer's envelope printing program (JUNE '93)

SKELETON.BAS - A tokenized version of the outline for Ron Fetzer's envelope printing program (JUNE '93)

T.COM & TYPETALK.COM - Louis Marcotte's M/L Type 'n' Talk programs (APRIL '93)

BLINKY.BIN - A M/L memory game by James Stage Jr.

JAILBRAK.BIN - A M/L game for 2 to 4 players by James Stage Jr.

TEASER.BIN - A M/L strategy game by James Stage Jr.

PUZZLER.BIN - A M/L picture puzzler by James Stage Jr.

FORMDOS1.OBJ and FORMDOS2.OBJ - An automatic DOS 2.5 formatter that also writes DOS.SYS, DUP.SYS and RAMDISK.COM, courtesy of the OHAUG disk library.

FORMDOS.DOC - Documentation for FORMDOS1 and FORMDOS2

RD.COM & RDF.COM - A Shareware RAMdisk utility for SpartaDOS 3.2d. Made available to to *AC* subscribers at a reduced shareware fee by special arrangement with PSI Labs. One of the most powerful and compatible RAMdisk utilities we've seen for Sparta users. It even works with AtariWriter-80!

RDDOC.TXT - Documentation for RD.COM & RDF.COM (includes description of special shareware deal for *AC* subscribers).

Side B

BBSLIST.TXT - An updated listing of Atari BBS's, courtesy of *AC's* Telecommunications Editor, Lawrence Estep.

UGLIST.TXT - A listing of known Atari user groups, from Lawrence Estep.

VORTEX.BIN - An animated page flipping demo by *AC's* Graphics & Entertainment Software Editor, Jeff Potter.

SOLCARD.BAS - A solitaire card game, courtesy of the BaPAUG disk library.

Both disk sides feature the FULmenu from SLCC, a File and Utility Loader menu that works as a mini-DOS.

Following are the instructions and scoring for the four M/L games by James Stage Jr. These games will load fine from the *AC* Disk menu, but be aware that if you copy any of the games to your own system disk you'll have to boot up your machine in BASIC and do a binary load from DOS to run them. They won't run without BASIC.

BLINKY

BLINKY is a memory game written in machine language and designed for up to four players. To select the number of players simply press #1 to #4 on the keyboard. To win the game, you have to mimic the sequence of bulbs BLINKY lights up by pressing the corresponding number next to the bulb. The better you do, the longer the sequence. Once you make a mistake the game is over. Scoring: -> 10 points for each correct bulb lit.

JAILBREAK

JAILBREAK is a machine language game for two to four players. To inititate play, press the ESCape key to roll the dice. Then press the SPACEBAR to stop the roll and press the number of the dice you wish to save and roll again. You have up to three rolls each turn. Beware of the guards and dogs because they'll stop you dead in your tracks if they can.

Scoring: -> 3 of a kind = 1 space
5 of a kind = 2 spaces
6 of a kind = 3 spaces
3 guards or dogs = back 1 space
5 guards or dogs = back 2 spaces
6 guards or dogs = back 3 spaces

TEASER

TEASER is a machine language strategy game in which you try to remove as many pegs as possible from the board. You remove pegs by jumping them. You move the pegs by typing in the letter you are at and then typing in the letter of the space you wish to move to. Illegal moves aren't allowed. If the move is legal, the peg will move, and the peg you jumped will disappear. When you've made as many moves as possible, press RETURN and your category will be noted with a diamond.

PUZZLER

PUZZLER is a machine language game with 10 puzzles to choose from. After the puzzle has loaded you'll notice the finished puzzle at the bottom of the screen. On the top of the screen is the scrambled puzzle. There will be a space in the bottom right corner of the puzzle so you can move the puzzle pieces. The square originally surrounding the space is moved by using the arrow keys. To move a piece, move the square so that it's surrounding the piece you wish to move. Press the SPACEBAR and the piece will turn pink. Move the square over the top of the pink space and press the SPACEBAR again. The piece will change places with the space and the piece will return to its natural color.

When you feel you've completed the puzzle, press RETURN. One of two messages will appear. If it says "NOT YET" there's at least one piece out of place. Check the puzzle again carefully. If it says "GREAT" there will be a short pause so that you can admire your masterpiece. After this pause it will return to the select screen. You can return to the select screen any time by pressing the ESCape key.

Kudos

I'd like to thank all the authors and user groups for their contributions. And a special thanks to Bill Bykens, Guy Ferrante and ZTM Software for their help and support.

Attention usergroups: *AC* is interested in distributing the best user-generated software on our Software Disk. If your usergroup library contains a real software gem that you would like to share with the rest of the 8-bit community, please send it to us for evaluation. We have a hunch there are some truly terrific programs out there, buried in the archives of usergroup libraries where they have lain neglected for gosh-knows how long. Perhaps you could search your library and select one or two of your finest, most professional programs. No more than two programs per disk, please! Contact: Steve Hoffee, ATARI CLASSICS Disk Editor, 333 Peninsula Drive, Lake Almanor CA 96137. GEnie: S.HOFFEE2; Internet: s.hoffee2@genie.geis.com .

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Modular Programming in Atari BASIC

Ron Fetzer, AC Contributing Author

How many times have you said, "I wish I could write a big program like Print Shop"? Have you ever wondered how these long professional programs were written? Could *you* write a program like this? The answer is, YES! If you think programming is too hard or that you have no talent for it, your'e missing 90% of the fun of owning an Atari 8-bit computer. If you learned programming by yourself, like I did, you know the limitations of "brute force" programming. I usually hit the wall around 200 lines before getting hopelessly lost.

Trade Secret Revealed!

There's a method of programming- not widely known among BASIC programmers- called Modular Programming. If you can write fifteen lines of code, you can write modular programs that easily exceed the memory of your computer. The central idea of modular programming is to break a big task into small units, so you're only concerned with just a small part of the task at a time. This approach actually makes programming an enjoyable activity! The academic term for this method is "Structured Programming". The professionals use it all the time but keep mum about it to us amateurs. Atari BASIC is well-suited to this method of programming because it's compact structure is so easy to learn.

Modular programming basically consists of writing short modules which are then strung together to create a whole program. So, what benefits can you gain by adopting a modular approach? Let me give you my "short list":

```
1.Your program will be easy to write the
    first time
2.Your program will be easy to read by
    anyone.
3.Your program will be easy to modify.
4.You'll be able to locate bugs very quickly.
5.Your code will be self-documenting.
6.Large programs won't be a problem.
7.Your code will be "elegant".
8.Programming will become fun again!
```

Going Modular

The first step is to simply write out your ideas for the program in longhand; make an outline just like you did for a composition in High School. Next you make a block diagram. That shows you how many modules you need and how they'll connect. Then you write a skeleton program. Its function is to ensure that the modules execute in the right order. Finally, you flesh out the skeleton program into a complete program.

Writing the code for the program is the easiest part and should take the least amount of time. Planning the program should take most of your time. This probably looks like a lot of work, but it isn't. It can be sketched out very quickly: each step leads to the next. You've now created a blueprint that's guaranteed to work. After you've tried this method once, you'll never go back to Brute Force programming again.

Using the modular approach, you start out with the most general module first and then proceed sequentially to the more specific ones. The first module is the control module: it's the head or brain of your program and controls all the other modules. However, these other modules don't influence the control module. In Atari BASIC you use the GOSUB - RETURN function for all modules.

The Envelope Printer

Last Christmas my better half asked, "Dear can't you write a program that prints addresses directly on the Christmas card envelopes? Sticking on labels looks so commercial". Thus was born the idea of the Envelope program. Why stop with Christmas cards? Let's do business envelopes and large 7x9 envelopes as well! Below is my outline of the ideas that I want in my program.

```
ENVELOPE PROGRAM
I. MAIN HEADING
   A)DIM SECTION
   B)SCREEN COLORS
   C)RETURN ADDRESS
   D)FORWARDING ADDRESS
   E)MENU
II. MENU
   A)CHRISTMAS CARDS (5x7)
   B)BUSINESS ENVELOPES (4x9.5)
   C)LARGE ENVELOPES (7x9)
   D)END
III. PRINT SECTION
   A)PRINT RETURN ADDRESS
   B)PRINT FORWARDING ADDRESS
```

I want the user to have a choice of screen colors while the program is on the screen. The user should type his return address only once and then have a choice of envelope sizes. The menu should also have an END option so the user can exit.

Now I have a general idea of what I want in my program. The next step is to write a block diagram. This block diagram will show you how many modules you need and the range of line numbers. Each line above will become a module.

Build Your Module With Blocks

A "block" is a section of code that performs one task. A module can contain one or more blocks. A block as well as a module should follow the rule of "straight sequence": the entry point should be at the top and the exit at the bottom of the block or module. Don't jump out of the module or block with a GOTO or you'll end up with "spaghetti code".

It's important not to skip this step. Sometimes you'll have modules calling sub-modules or sub-sub-modules. Each module is in the form of a GOSUB - RETURN. I increment the line numbers for each module by 500 numbers

to make life easy for myself. The block diagram below follows the outline I presented earlier.

```
  ENVELOPE BLOCK DIAGRAM
   10 -   499 CONTROL BLOCK
  500 -   999 DIM SECTION
 1000 - 1499 SCREEN COLORS
 1500 - 1999 ENTER RETURN ADDRESS
 2000 - 2499 MENU
 2500 - 2999 ENTER FORWARDING ADDRESS
 3000 - 3499 * CHRISTMAS ENVELOPES
 3500 - 3999 * BUSINESS ENVELOPES
 4000 - 4499 * LARGE ENVELOPES
 5000 - 5499 PRINT RETURN ADDRESS
 5500 - 5499 END
```

* These modules also use the sub-modules PRINT RETURN ADDRESS and FORWARDING ADDRESS.

The control module calls all other modules. Each module returns eventually to the control module where it gets directed again to the menu module. A good program is easy to read, consistent and self-documenting. We now have an outline of our program with all its modules.

A Modular Skeleton

Now it's a straightforward exercise to set up a skeleton program. The skeleton program will confirm the correct execution of your modules. Later, we'll flesh out the skeleton to the full program. Each module in the skeleton program should contain a PRINT statement to show the function of the module when the program is run. We'll remove these PRINT statements when we flesh out the program later on. Here's the skeleton program:

```
  ENVELOPE SKELETON PROGRAM
0 GOTO 10
1 SAVE "D:SKELETON.ENV":CLR
5 REM SKELETON PROGRAM FOR "ENVELOPE.ATR" VER 1.0 IN ATARI BASIC BY RON FETZER 9/92
10 REM CONTROL MODULE**************************************
20 ? CHR$(125):GOSUB 500:REM DIM SECTION
30 GOSUB 1000:REM SCREEN COLORS
40 GOSUB 1500:REM RETURN ADDRESS
50 GOSUB 2000:REM MENU
60 GOTO 50
500 REM DIM SECTION****************************************
510 ? :? "DIM SECTION":GOSUB 30000
520 RETURN
1000 REM SCREEN COLORS*************************************
1010 ? :? "SCREEN COLORS":GOSUB 30000
1020 RETURN
1500 REM RETURN ADDRESS************************************
1510 ? :? "RETURN ADDRESS":GOSUB 30000
1520 RETURN
2000 REM MENU**********************************************
2010 ? :? "            MENU:":? :?
2020 ? "1. CHRISTMAS CARDS(5 X7)"
2030 ? "2. BUSINESS ENVELOPES(4 X 10)"
2040 ? "3. LARGE ENVELOPES(7 X 9)"
2050 ? "4. END"
2060 ? :? "            SELECT A NUMBER";:INPUT N
2070 ON N GOSUB 3000,3500,4000,5500
2080 RETURN
2500 REM FORWARDING ADDRESS********************************
2510 ? :? "FORWARDING ADDRESS":GOSUB 30000
2520 RETURN
3000 REM CHRISTMAS CARDS***********************************
3010 ? CHR$(125):GOSUB 5000
3020 GOSUB 2500
3030 ? :? "CHRISTMAS CARDS(5 X 7)":GOSUB 30000
3040 RETURN
3500 REM BUSINESS ENVELOPES********************************
3510 ? CHR$(125):GOSUB 5000
3520 GOSUB 2500
3530 ? :? "BUSINESS ENVELOPES (4 X  9.5)":GOSUB 30000
3540 RETURN
4000 REM LARGE ENVELOPES***********************************
4010 ? CHR$(125):GOSUB 5000
4020 GOSUB 2500
4030 ? :? "LARGE ENVELOPES(7 X 9)":GOSUB 30000
4040 RETURN
5000 REM PRINT RETURN ADDRESS******************************
5010 ? :? "PRINT RETURN ADDRESS":GOSUB 30000
5020 RETURN
5500 REM END************************************************
5510 ? :? "END OF PROGRAM":GOSUB 30000
5520 END
5530 RETURN
30000 REM TIME DELAY LOOP USED ONLY IN THE SKELETON PROGRAM ****************************************
30010 FOR T=1 TO 180:NEXT T
30020 RETURN
30030 REM*****************************************************
```

Scoping The Skeleton

Notice how I separate each module with a REM and the module name. Then I fill in the rest of the module separator with asterisks until I have two 40-column screen lines. This makes it quite easy to identify each module in the program at a glance. The time delay loop in lines 30000 to 30020 is used only in the skeleton program to slow down the program so you can observe its execution.

Every program should have a line 0,1 and 5. Line 0 should always be 'GOTO 10'. Thus when you type RUN the program will go to line 10 and execute. Line 1 should always be 'SAVE "D:FILENAME.EXT":CLR' (in my program it's '1 SAVE "D:ENVELOPE.ATR":CLR'). This is very useful when you're developing a program. Each time you want to save part or all of the program you type 'GOTO 1'. The program will be saved with the same filename all the time. You won't have multiple versions of the program, just one version all the time. The CLR is needed to remove any previous DIM so the program will run okay.

Line 5 is the title line of the program. It should always contain the following information:

The author of the program.
The name of the program.
The version number of the program.
The language used to write the program.
The date it was written.

Look at line 5 of the listing; the above elements are there. You might also wish to include your address if you want users to contact you.

Meat On The Bones

Now we'll flesh out our skeleton program. Remember our first module is the Control Module. When I clear the screen I always use ? CHR$(125) because every printer can list it; special characters can't always be listed. The Control Module is already finished as it appeared in the skeleton program:

```
10 REM CONTROL MODULE************
20 ? CHR$(125):GOSUB 500:REM DIM
       SECTION
30 GOSUB 1000:REM SCREEN COLORS
40 GOSUB 1500:REM RETURN ADDRESS
50 GOSUB 2000:REM MENU
60 GOTO 50
```

The program flows from the DIM SECTION to the SCREEN COLOR module, then the RETURN ADDRESS module and finally the MENU module. Notice line 60: the program returns to this line after each menu selection is completed. Line 60 directs it again to line 50, so you always return to the menu. This is called a Case Structured program, and it's the most common type of programming structure used.

Our next module is the DIM SECTION. The first thing you do is remove the PRINT statement from the skeleton program; we don't need it any more. There is nothing strange in this module. Just put in your DIMensioned variables as required. Your DIMensioned variables should always be in a module at the beginning of the program like this so you'll know where to find them. Don't forget the RETURN statement now has a new line number.

The first line after the REM in each module is the "housekeeping line" for the module. Things like PEEKS, POKES, string lengths, initialization of variables, and special codes will be put in this line. I do this the same way for each module: such consistency is the hallmark of a good program. Notice in line 1010 the variable R$ is set to equal 13 empty spaces. Rather than use the POSITION command for my menu selection, I put R$ in front of the options. To center the options, all I have to do is change the length of R$. I want the user to have a choice of four different screen colors while using the program. Error trapping should be extensive and should always be done the same way in each module. The program exits to the end of the module when the user has made a selection. This module (and all modules) follow the law of straight sequence. You enter at the top and exit at the bottom. Make all your modules follow this rule, and your program will be easy to read and understand.

Filling In The Guts

Next is the RETURN ADDRESS module. Remove the PRINT statement from the skeleton program. Again our first line after the REM is the housekeeping line. I only need a ? CHR$(125) in this module. Then I ask for INPUTS for name, street, town, state, Zip Code and country (optional). (I write many letters overseas so the country is important to me.) This is straightforward programming. The module ends with a RETURN in line 1590.

Now for the MENU module. In the housekeeping line (2010) I have an 'LPRINT CHR$(27);"8"'. This is the control code to TURN OFF PAPER SENSOR for an Epson printer. I want this sensor off because I'll constantly be feeding envelopes into my printer. If you don't know the code for your printer, proceed as follows. Remove the paper from your printer; the PAPER OUT sensor should cause an alarm to sound. Insert a narrow strip of paper into the paper feed until the alarm goes off. *[The sensor in most printers usually consists of a weakly spring-loaded microswitch behind the platen that's activated by the pressure of the paper held against it. It's usually visible as a metal or plastic tab in the slot behind the roller where the paper enters the printer. Ed.]* Then temporarily tape it to the top of your case so it won't get fed through the rollers. Now you can feed envelopes without interference from the sensor. Be sure to have an END option in the menu selection so the user can exit. Error trapping again is the same as in the other modules. The module exits with a RETURN in line 2100.

In the FORWARDING ADDRESS module I initialize all variables to an empty string in the housekeeping line in 2510. This module will be accessed repeatedly. I want to ensure all the strings are empty. Otherwise, it's the same as the RETURN ADDRESS MODULE.

The CHRISTMAS CARD, BUSINESS ENVELOPE and LARGE ENVELOPE modules are all very similar. In the housekeeping line I initialize the variables and set B$ equal to the required spaces. I call for sub-module FORWARDING ADDRESS (GOSUB 2500) and sub-module PRINT RETURN ADDRESS (GOSUB 5000). Then I print the name, street, town, state, Zip Code and country on the envelope. I exit with a RETURN that goes to line 2100 and then to the control module line 60, which returns you to the menu module.

The last module is the END module. On the housekeeping line I use POKE 752,1 to turn off the cursor. Then I print "END OF PROGRAM" in the middle of the screen. I

change the screen color back to default with a GRAPHICS 0 command and turn the cursor back on again.

Reviewing The BASICs

You can now see how easy it was to complete each module and the whole program. Even if you're a beginner, you can read and understand this program. It's consistent, and it follows the law of straight sequence. You enter at the top and exit at the bottom of the modules. You now can easily modify this program by adding other modules for different envelope sizes if you wish. There was no frustration in writing these modules. It was fun and very satisfying. You don't have to be a super programmer to complete a program like this. If you use modular programming the fun of computing will come back again, and your programs will be a joy to read and run.

Make It Professional!

The final step is to polish the program. Make sure titles are centered on the screen, variables initialized or set to 0, error trapping is in place. As the last step I renumber the program. I load it into TurboBASIC (which has a renumber command) and type RENUM 10,10,10. This renumbers my program from line 10 on with a 10 line interval and wraps everything up neatly.

So far I've described all the things a good program should have, but there are some things you should avoid. Don't create a fancy graphic or logo screen as the first module. Remember, the user has to use your program repeatedly. A fancy opening screen says only one thing: "Look what a clever programer I am!". Conceit like this is hard to bear repeatedly. It's okay to have a fancy opening screen on your documentation file because it will be accessed only occasionally, which is tolerable.

Writing good documentation is as important as writing a good program. Your program "docs" should be complete and as brief as possible. Reading a doc file is inherently boring, so make it short. Don't include all the clever programming tricks you used (the average user is "turned off" by this). Don't be verbose. It's okay to include printer control codes or other data the user might need to change in order to adapt the program to his particular environment, but other than that it should have no programming code in it. Also include your address in the docs so users can contact you.

Don't compile a program unless necessary. There are only two good reasons to compile: faster speed and to hide your code. A program that depends for its speed on a peripheral device should never be compiled. For example, there would be no point in compiling my Envelope program because its speed is determined by the printer.

Don't use obscure PEEKS and POKES if a regular structure is available. Overused PEEKS and POKES are only justified if your free memory is running out. Obscure and overused PEEKS and POKES say just one thing: "See how clever I am! You can't follow me." It's another form of programming conceit. I guess most of you have heard of Atari programming guru Dave Small, who began his programming career on the Atari 8-bit and then achieved fame as the wizard who emulated the Apple Macintosh on the Atari ST. As a final remark I'm aware of Dave's contempt for structured programming, but even he would admit that a clear organized program is better than messy spaghetti code!

Ron is a member of the Ol' Hackers Atari User Group in Oceanside, New York. Your comments and reactions to this article are appreciated. Please write to: Ron Fetzer, 22 Monaco Ave., Elmont NY 11003, USA.

[Editor's Note: for readers interested in further pursuit of BASIC programming, Ron has produced the TurboBASIC Programmer's Kit, a double-sided three-disk set distributed inexpensively by the OHAUG group. Contact Alex Pignato, president of OHAUG, at 3376 Ocean Harbor Drive, Oceanside NY 11572, USA if you'd like to order the Kit. -BLP]

```
 ENVELOPE PROGRAM LISTING
0 GOTO 10
1 SAVE "D:ENVELOPE.ATR":CLR
5 REM ENVELOPE PROGRAM BY RON FETZER, VERSION 1.0, 9/92 IN ATARI BASIC
10 REM CONTROL MODULE ******************************************************
20 ? CHR$(125):GOSUB 500:REM DIM SECTION
30 GOSUB 1000:REM SCREEN COLORS
40 GOSUB 1500:REM RETURN ADDRESS
50 GOSUB 2000:REM MENU
60 GOTO 50
500 REM DIM SECTION ********************************************************
510 DIM R$(40),N$(40),ST$(40),TW$(40),STA$(40),Z$(12),CN$(40)
520 DIM B$(40),P$(18),NF$(40),STF$(40),TWF$(40),STAF$(40),ZF$(12),CNF$(40)
600 RETURN
1000 REM SCREEN COLORS *****************************************************
1010 Q=0:R$="              "
1020 POSITION 6,6:? "WHAT SCREEN COLOR DO YOU WANT":? :? :?
1030 ? R$;"1: NORMAL"
1040 ? R$;"2: AMBER"
1050 ? R$;"3: GREEN"
1060 ? R$;"4: GREY"
1070 TRAP 1070:POSITION 10,17:? "SELECT A NUMBER";:INPUT Q:TRAP 40000
1080 IF Q<1 OR Q>4 OR Q<>INT(Q) THEN ? :? "ERROR: SELECT A NUMBER FROM 1 TO 4":GOTO 1070
1090 ON Q GOTO 1100,1110,1120,1130
1100 POKE 710,148:POKE 709,13:GOTO 1140
1110 POKE 710,58:POKE 709,0:GOTO 1140
1120 POKE 710,234:POKE 709,0:GOTO 1140
1130 POKE 710,12:POKE 709,0:GOTO 1140
1140 RETURN
1500 REM RETURN ADDRESS ****************************************************
1510 ? CHR$(125)
```

```
1520 POSITION 12,5:? "RETURN ADDRESS:"
1530 ? :? :? :? "NAME:          ";:INPUT N$
1540 ? "STREET:         ";:INPUT ST$
1550 ? "TOWN:           ";:INPUT TW$
1560 ? "STATE:          ";:INPUT STA$
1570 ? "ZIP CODE:       ";:INPUT Z$
1580 ? "COUNTRY(OPTNL):";:INPUT CN$
1590 RETURN
2000 REM MENU ***************************************************************
2010 ? CHR$(125):N=0:LPRINT CHR$(27);"8":P$="      "
2020 POSITION 12,6:? "ENVELOPE SIZE:"
2030 ? :? :? P$;"1. CHRISTMAS CARDS(5 X7)"
2040 ? P$;"2. BUSINESS ENVELOPES(4 X 9.5)"
2050 ? P$;"3. LARGE ENVELOPES (7 X 9)"
2060 ? P$;"4. END"
2070 TRAP 2070:POSITION 10,15:? "SELECT A NUMBER";:INPUT N:TRAP 40000
2080 IF N<1 OR N>4 OR N<>INT(N) THEN ? :? "ERROR: SELECT A NUMBER FROM 1 TO 4":GOTO 2070
2090 ON N GOSUB 3000,3500,4000,5500
2100 RETURN
2500 REM FORWARDING ADDRESS *************************************************
2510 ? CHR$(125):NF$="":STF$="":TWF$="":STAF$="":ZF$="":CNF$=""
2520 POSITION 10,5:? "FORWARDING ADDRESS:"
2530 ? :? :? :? "NAME:          ";:INPUT NF$
2540 ? "STREET:         ";:INPUT STF$
2550 ? "TOWN:           ";:INPUT TWF$
2560 ? "STATE:          ";:INPUT STAF$
2570 ? "ZIP CODE:       ";:INPUT ZF$
2580 ? "COUNTRY(OPTNL):";:INPUT CNF$
2590 RETURN
3000 REM CHRISTMAS CARDS ****************************************************
3010 ? CHR$(125):A=0:B=0:B$="                          ":REM 25 SPACES
3020 GOSUB 2500
3030 GOSUB 5000
3050 FOR A=1 TO 8:LPRINT :NEXT A
3060 LPRINT B$;NF$
3070 LPRINT B$;STF$
3080 LPRINT B$;TWF$;"  ";STAF$;"  ";ZF$
3090 LPRINT B$;CNF$
3100 FOR B=1 TO 10:LPRINT :NEXT B
3110 RETURN
3500 REM BUSINESS ENVELOPES *************************************************
3510 ? CHR$(125):A=0:B=0:B$="                                    ":REM 35 SPACES
3520 GOSUB 2500
3530 GOSUB 5000
3540 FOR A=1 TO 6:LPRINT :NEXT A
3550 LPRINT B$;NF$
3560 LPRINT B$;STF$
3570 LPRINT B$;TWF$;"  ";STAF$;"  ";ZF$
3580 LPRINT B$;CNF$
3590 FOR B=1 TO 10:LPRINT :NEXT B
3600 RETURN
4000 REM LARGE ENVELOPES (7 X 9)*********************************************
4010 ? CHR$(125):A=0:B=0:B$="                                    ":REM 35 SPACES
4020 GOSUB 2500
4030 GOSUB 5000
4040 FOR A=1 TO 12:LPRINT :NEXT A
4050 LPRINT B$;NF$
4060 LPRINT B$;STF$
4070 LPRINT B$;TWF$;"  ";STAF$;"  ";ZF$
4080 LPRINT B$;CNF$
4090 FOR B=1 TO 18:LPRINT :NEXT B
4100 RETURN
5000 REM PRINT RETURN ADDRESS ***********************************************
5010 LPRINT N$
5020 LPRINT ST$
5030 LPRINT TW$;"  ";STA$;"  ";Z$
5040 LPRINT CN$
5050 RETURN
5500 REM END *****************************************************************
5510 ? CHR$(125):POKE 752,1:T=0
5520 POSITION 12,11:? "END OF PROGRAM":FOR T=1 TO 90:NEXT T
5530 GRAPHICS 0:POKE 752,0:END
5540 RETURN
5550 REM *********************************************************************
```

COLRVIEW: 4096 Simulated Colors On The Classic Atari

Jeff Potter, Graphics & Entertainment Editor

Those of you who recognize my name have probably seen my APAC (All Points All Colors) mode GIF (Graphic Interchange File) picture file decoders. I imagine a fair number of you gave up on APAC mode when your monitor produced only pale shades of red and blue, instead of the wide range of colors I claimed APAC would give you. Well, that has something to do with the type of monitor you have, and it's something nobody has been able to clear up for me. Some monitors produce excellent colors with APAC mode, while others (which are otherwise fine) just can't show APAC pictures.

The Beginning...

So, I decided to see if I could improve upon APAC. I had studied the Atari ST Spectrum 512 graphics format for awhile, with thoughts of writing an 8-bit progam to decode and display these picture files. It was quite a trick: rewriting each of the 16 color registers up to three times each, allowing up to 48 different colors within a raster line. So I thought to myself: surely the 8-bit computer could do something that approached this many colors. I wrote a program to display GRAPHICS 9 images, and a display list interrupt to try to change the color as many times in a line as possible.

Well, that didn't get too far. At best I seemed to be able to change one color register about two or three times within a raster line (and not very reliably at that). The old 6502 just isn't as fast as the 68000 series, especially when it has to deal with the extensive Antic DMA required by GRAPHICS 9. It seemed hopeless at that point, but then I noticed something. Somehow, every once in a while in the picture, the color would be almost perfect. I studied it carefully and realized that one line contained the correct red color component, the next line contained the correct green color, and the next had the blue. If you didn't look too closely, your eyes would merge the three lines into the correct color. If you break out a magnifying glass and examine a color monitor or television you'll notice this on a smaller scale. A three dot pattern (either in a triangle, or horizontally adjacent dots) exists on the surface of your picture tube. Because it's too small to be seen as individual dots, your eye perceives it as one color, not three.

I then tried displaying three images in rapid succession (by page flipping), where the image is entirely red, green, or blue (GRAPHICS 9). This flickered horribly and didn't produce the color effect I sought. But it got me to thinking... .

COLRVIEW Is Born

Then I hit upon the idea of page flipping three screens of display memory, and also using a display list interrupt to cycle between the three colors on a per-line basis. On the first screen, the top line (and every 3rd thereafter) is red, followed each time by lines of green and blue. On the second screen, the top line (and every 3rd thereafter) is green, followed by blue and red. Similarly, on the third screen, the top line is blue, then red and green. Every line of all three screens would be 80 unique pixels of GRAPHICS 9 (16 intensities, one color), as decoded from, say, a GIF image file. Each screen would be 192 lines, containing 7680 bytes. This is best shown by the diagram below, where RRR...RRR represents individual red pixels (80 per line), etc.

```
First Screen       Second Screen        Third Screen
----------------   ----------------     ----------------
line   0  RRRRRRRRRRRRRRRR   GGGGGGGGGGGGGGGG   BBBBBBBBBBBBBBBB
line   1  GGGGGGGGGGGGGGGG   BBBBBBBBBBBBBBBB   RRRRRRRRRRRRRRRR
line   2  BBBBBBBBBBBBBBBB   RRRRRRRRRRRRRRRR   GGGGGGGGGGGGGGGG
line   3  RRRRRRRRRRRRRRRR   GGGGGGGGGGGGGGGG   BBBBBBBBBBBBBBBB
line   4  GGGGGGGGGGGGGGGG   BBBBBBBBBBBBBBBB   RRRRRRRRRRRRRRRR
line   5  BBBBBBBBBBBBBBBB   RRRRRRRRRRRRRRRR   GGGGGGGGGGGGGGGG
         :                 :                  :
         :                 :                  :
line 189  RRRRRRRRRRRRRRRR   GGGGGGGGGGGGGGGG   BBBBBBBBBBBBBBBB
line 190  GGGGGGGGGGGGGGGG   BBBBBBBBBBBBBBBB   RRRRRRRRRRRRRRRR
line 191  BBBBBBBBBBBBBBBB   RRRRRRRRRRRRRRRR   GGGGGGGGGGGGGGGG
```

This produced wonderful colors! Within the image there will appear to be a "swimming" effect, as if something were constantly moving downwards. This can be minimized with judicious contrast and brightness settings. Best of all, this technique appears to work on all color monitors and televisions I've tried! Atari users could now display 80Hx192V pixel images, with 16 shades each of red, green and blue. If you allow for the color combining that your eyes can perform, along with the persistence of vision effect, you can show 16x16x16 or 4096 colors!

I later generalized this technique by applying it to GRAPHICS 15 (160Hx192V with four colors) to produce higher resoluton images with 64 colors (4x4x4). The 4096 color mode is best for digitized photographs, or images with areas of pastel colors, or where the color changes gradually and subtly. The 64-color mode is best for line drawings, cartoons, or photographs with fine detail and high contrast.

As you might guess, this new technique relies heavily on display lists and vertical blank interrupts. It relies so heavily on them that little time is left for your computer to do other things like read and write to the disk drive, or to service interrupts caused by the R: device.

Support Shareware: Get COLRVIEW

If you'd like to experiment with this new technique, download the program COLRVIEW from your local BBS (if it's there). GEnie subscribers can obtain it from the Atari8 RT Library, file #6134, COLRVW26.ARC; CompuServe users will find it as CLRV26.ARC in the CIS 8-bit library. *[Editor's Note: due to an administrative snafu we inadvertently omitted COLRVIEW from the June Software Disk; we plan to offer COLRVIEW on the October Disk. -BP]* I'd also like to point out that COLRVIEW is shareware, so if you use it I'd appreciate your sending the modest $8.50 shareware fee I've requested. It is primarily through shareware that our software market now survives. Shareware fees are usually well within the means of most users, and the payment of these modest sums is all that fuels research into novel programming techniques such as this article describes.

Many people have uploaded picture files to local BBSes and to the commercial network systems that can be viewed

with COLRVIEW. Some of these were created with another shareware program of mine called APACVIEW, which can convert GIF picture files to COLRVIEW format. You might also wish to check your online sources for DEGASRD, another of my shareware offerings which decodes and views Atari ST Degas pictures directly into COLRVIEW mode.

How To Use COLRVIEW

COLRVIEW's file format is simplicity itself. You create three images in GRAPHICS 9 or 15 (if in 15, set your four colors to black, dark gray, light gray, and white). Save them as three separate files, named PICTURE.R, PICTURE.G, and PICTURE.B (replace PICTURE with your filename). The .R file contains the red informaton, .G contains the green, and .B contains the blue.

One way to create pictures is with a ComputerEyes camera and sets of color filters. Although I haven't tried this personally, a professional photographer gave me the following advice: Use a daylight-balanced (BCA-No.1) photo light if possible. Obtain some Kodak Wratten Gelatin Filters (these are available in 3"x3" squares and can be cut to any size) of the following types: #25 red, #58 green, and #47 blue. (These filters are usually available at any photo shop.) Make one exposure (saving it as a .R, .G, or .B file) through each filter. Try photographing still lifes, as your subject must not move between exposures. If you want to digitize livelier subjects, take a color photo of it and digitize the photograph with your camera.

I know an artist/programmer who has created his own images in GRAPHICS 9 or 15 (with great difficulty) using a program like RAMbrandt. He would mentally decide on the color to be used for each area of the picture, and modify all three picture files in the right way. He has since gone on to create a program to automate some of this activity. Look for RGBPAINT, available in the CompuServe 8-bit library. I can't comment on its performance, as it requires an expanded memory machine (130XE or 256K 800XL).

I've also seen the output of a program to convert Amiga ILBM/IFF pictures to ColorView mode, and another program that plots fractal curves in ColorView mode. Neither of these have been released yet (but let's encourage these guys!).

In a future sequel to this article, I'll tell you where to look for COLRVIEW images. I'll also provide some code segments to allow you to set up the appropriate display lists and display list interrupts in your own programs. With just a bit of clever programming, you can train your Classic Atari to render graphics displays that will compare favorably with the performance of the overblown hardware being sold in today's mainstream market.

Looking Back: What is VersaWriter?

Gary Matteson (aka "The Wagon Master"), AC Staff Reviewer

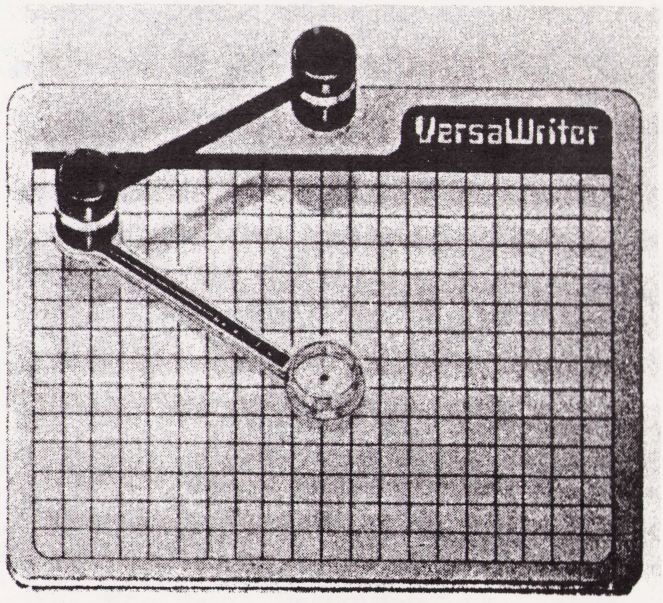
VersaWriter Versus The Alchemist

A couple years ago, a former Atari dealer unexpectedly offered me (for a price) a few boxes of various and sundry Atari 8-bit pieces, parts, software and some stuff not all of which I have identified. So I asked my friend, The 8-Bit Alchemist, the question constituting the title of this article, in the hope he might shed some light on this mysterious contraption I had inherited, called VersaWriter. Before much time had passed the Master 8-Bitter conceded he didn't know what a VersaWriter is and was unable to learn anything about it.

[Editor's Note: Well, that's not quite true. Initially I didn't recognize what the thing was, though Gary's description of it struck me vaguely familiar. I sent an e-mail inquiry to Bob Brodie at Atari Corp. and received a bizarre response: he claimed VersaWriter was an Atari product that had been released in Europe, information obviously furnished to him by the Looney Crew at Sunnyvale! I communicated that to Gary but continued searching the Alchemist Archives until eventually I located some literature on the thing- complete with prices- even sending Gary some xeroxes of the precious yellow parchment in my files which is also reproduced in the graphic accompanying this article... uh-oh. Now I've done it. My secret identity and dark past are revealed. Yes, Dear Reader, your Managing Editor is in fact The 8-Bit Alchemist, formerly 8-Bit Editor and Columnist in Current Notes Magazine, nefarious hacker of 8-bit hardware. Especially the machine's analog circuits, which all the digital pundits ignore... . -BP]

Gemstone? Or Just Stone?

John Denver sang the song "Some Days are Diamonds (Some Days are Stone)". The truth is, with VersaWriter- which I'll henceforth refer to as VW- my first thought was I had found both diamond and stone. It appeared to be



VersaWriter

brand-spanking new, nested in its original box and packing, with a manual and original disk! Sitting in my thinking chair, gazing at it, I thought it very unlikely the original software (v1.2, 1981) could have survived 10+ years on the shelf. No way is this going to work, all I have is a stone, an unusual piece of hardware, useful only as an artifact for museum display. The software can't possibly be intact... but- as I discovered to my amazement- it was, and I happily completed a sector copy of the original disk. That done, I connected the hardware to port 3 of my Atari 800 as instructed and then started the autoboot operation.

The original VW software is a single sided, non-copy protected disk having 000 free space left on it, I wondered what had been left out to make that happen. I wasn't surprised the VW disk had no copy protection, clearly, the program is useless without the necessary hardware.

The VersaWriter Reference Manual (c) February 1981, explains what this strange contraption is: "VersaWriter is a digitizer board and software system that allows quick entry of graphics on the Atari (using a) High or Medium resolution screen." No less true today than in 1981, the manufacturer (Versa Computing) points out, "We should save our work frequently. All work is saved as either .PI7 or .PI8."

The VW hardware consists of a white plastic "drawing board" that measures 12" vertically and 13.5" horizontally; a clear mylar cover lies over the drawing area. Fixed to the top of the drawing board is a device that looks like a draftsman's tool. Centered on the stout plastic board (it's about 1/4" thick) is a cylindrical, pivoting housing containing a potentiometer. A sturdy-looking 6" long arm is mounted to it, and attached to the other end of this arm is another pivot containing a second internal "pot".

Another, although much lighter 6" arm, is connected to this pivot. The second arm has a 50-cent piece sized clear lens at the end with a small black opaque dot in the center. As a unit, the digitizer definitely qualifies to be called: delicate. Digitizers had already been successfully used with other high level computers of the time, so I easily recognized this hardware as a very clever adaptation for the Atari 400/800. Please note, I said *other* high level computers.

By Golly, It Works!

Before VW can be used, a necessary one-time calibration must be done. The calibration allows the main program to "know" where the 90, 180, 270 and 0/360 degree points are. Those values are then written to the VW working disk. This also establishes a direct relationship between the cursor and the drawing lens.

Having completed the initial set-up, I could start drawing my masterpieces: first an outline of the beautiful State of Nebraska, with a screen of commentary! Another reading of the manual suggested this wan't a good place to begin. VW isn't geared toward freehand picture drawing. Rather, it's for tracing pictures or diagrams of any kind that already exist. You place your original under the mylar cover and then trace or copy it using the dot in the clear lens. The drawing tools utilize four colors (the fourth is the background and is switchable using "B".)

In the drawing toolbox are "X" and "Y" DRAW to draw straight vertical or horizontal lines, "Z" DRAW WITH PAINT BRUSH and "A" DRAW WITH THE AIR BRUSH. The AIRBRUSH accesses and uses the colors differently from the PAINT BRUSH; the result of the approach used yields more flexibility in the drawing. For instance, on choosing the AIRBRUSH, the user might be queried: (draw) White on Black or Black on White? The single command "E" for erasing works with all the tools. Other tools are: color fill "closed figures", draw with fixed X or Y coordinates.

Recentering of the current cursor position on the monitor is possible if your original artwork is off-center. Screen editing, a Help screen and other useful tools are provided. Finished or not, the background color of a picture can be changed or switched to "inverse". Closed parts within the picture can have the color changed, or the whole picture can be "inversed".

Text may added to pictures created by VW, any mix of the standard Atari font or the three included fonts is permitted: Computer, Atari Stylised, and Greek, upper/lower case, and inverse. Want a different font? Not to worry. Other fonts may be imported, such as those generated by the IRIDIS Fontedit program.

Scaling is possible, even advisable. On a scale of 0-4, 2 is 2X the size of your original, or .25 = 1/4 the size of the original. To smooth out the inevitable squigglies, a 0-5 level of "smoothing" can be applied, which enabled me to make a pretty good outline of my state, Nebraska. Yup, I did it! (A map helped.)

Pretty Decent Software

Most all VW commands are single key operations. The programmers did a very credible job with all aspects of the program. Written in BASIC, the program is stable and doesn't "crash" unexpectedly. Although this is a robust program, the user is warned to *never* to press BREAK or SYSTEM RESET, the loss of some or all your unsaved picture may be the price. Accuse me of nit-picking if you will, but I was surprised those points weren't managed through error trapping software to create a "safety net" to prevent any action if those keys are accidently pushed. Surely it's simple matter to disable at least the BREAK key. The single key "Q" command allows a clean Quit back to BASIC.

The manual addresses all of the program functions in a clear, concise manner with full but separate explanations for High and Low resolution modes (there are differences between the two). The VW manual also includes a memory map. How many programs have you seen that do *that?*

Included on the disk is a companion program called VWPICLD, which is meant to be copied to and distributed with your saved picture files. Versa Computing understood that without a program to "show" the files, we couldn't share our creations with friends. You can save up to ten pictures per SS/SD disk. I was disappointed to learn there wasn't any provision for printing the picture files. Perhaps a future software modification or seperate program was in the works, but we may never know. I have an Atari XDM-121 daisy wheel printer anyway, so I'm unable to check whether any other program can access the disk and print the pictures.

Versa Computing provided a registration form which indicates to me they intended to fully support this product; extra space is provided for suggestions and ideas from users. I feel certain some of these would have been incorporated to either upgrade the then current software or provide avenues for future developement of new VW soft-

ware. I sense Versa Computing's optimism was genuine, but at a suggested price of $299 in 1983, I believe the product was overpriced, making it un-supportable. I'm otherwise unable to account for its failure to catch on.

For a "very early in the life of Atari" product, this is a very good one. Both the precision drawing instrument and the program exude quality throughout. Versa Computing's claim to plot one of 61,000 screen points and resolving angles to 2/10 of a degree, impresses me. I have neither the expertise nor the tools to test the claim, but I have accepted it as true.

Some Conclusions

Now to answer the question over which I crossed paths with that Alchemist so long ago: What is VersaWriter? First, it's a duplicating tool. A steady hand is a valuable but not totally necessary asset because some help is built into the program to disguise the fact you don't have one. Second, for the Atari, VersaWriter certainly is an original, high quality tool and it really works. The implimentation of VersaWriter on the Atari 800 had to have vastly exceeded the expectations of those early users of the Classic Atari computer. It only to proves once again something most Atarians know: our 8-bit is an extraodinary and powerful computer. I would think VW would have worked with the other Atari 8-Bit computers, however I'm unable to test the notion.*[Editor's Note: I don't think it would, at least not without some modification to the software. The XL/XE machines don't have joystick ports 3 and 4 like the 800 has. -BP]*

Should VersaWriter be in a museum? Probably. It's a very rare piece of hardware. Although it's not for sale, I might consider donating it to a museum someday. Especially if the display were designed show originality; to show how computers developed and grew; to demonstrate how programmers and developers (unrelated to the original manufacturer) influenced and expanded the way we used our computers. I guess I'm dreaming; if there's ever to be any museum, likely it will be at my house. Perhaps you've heard the expression, "One good antique deserves another".

I would like to hear from anyone who has higher versions of the software or who has hardware additions or differences. Please write to me c/o *Atari Classics.* I'm not going to hold my breath even though the serial number on my VersaWriter (#4019) suggests many of these were produced. Well, gotta go, I think I hear Rod Serling calling... . Happy trails to you!

[Alchemist's Comment: In tekkie parlance, this device is what would be called a "pantograph". VersaWriter is in fact the deluxe version of another unit manufactured by Versa Computing called the Versa Writer Tablet, which appears to have been a product akin to the Atari Touch Tablet. Versa released, as a stand-alone product, a program called Graphics Composer that seems to have consisted of the VersaWriter software with some added drawing features but still lacking a print utility. A very long time ago I almost bought a VW from a guy who didn't know what it was. At that time I didn't know what it was either, so I walked away. Now I would kill for one. It looks like an ideal tool for anyone wishing to digitize electronic schematics, architectural diagrams, etc. Very rarely they turn up at swap meets. Extremely useful gadget, especially if the software is fleshed out with a print utility. -BP]

Tips 'N' Tricks

XDM-121 Ribbons: From Classic enthusiast Lee Barnes comes comes a tip that Atari XDM-121 owners can buy new, re-inkable fabric ribbons locally from large office or computer supply stores for around $5 by asking for an Olivetti ET-121 ribbon. The ET in ET-121 stands for Electric Typewriter. You'll get a Silvereed #5503 or equivalent generic ribbon cartridge. If you ask for an Atari XDM-121 ribbon all you get is a dumb look.

Classic Atari Classic: Next time you've got your XL or XE fired up, drop into the OS self-test routines (by typing BYE from BASIC), and run the audio self-test routines. You'll see the famliar 6-note theme appear on your screen, and of course you'll hear the music if you're using a monitor with sound, an external speaker, or the sound turned up on your TV. Interesting little tune, no? It's the Promenade theme from Russian composer Modest Moussorgsky's original piano work, "Pictures At An Exhibition", composed exactly 119 years ago this month (June 1874). A true touch of the Classics in your Classic Atari. Next time your IBM friends sneer at your worthless toy, just play the self-test for them, then ask if their barbarous clone can do that.

AtariWriter-80 Bugs: Oh no, not again! A few more in the accumulating list of ATW-80 aberrations; these are annoying but harmless. We're guessing all are due to flakiness in ATW-80's XEP-80 interface code. Sometimes while typing a line, the cursor will jump down into the line below while you're in the middle of the screen. Hit ESCcape, then E(dit), the cursor comes back where it belongs when the screen is re-written. When you're typing a line near the bottom of the screen, the very bottom line may display gibberish upon typinf a return. The gibberish frequently consists of inverse @ symbols. It goes away when you re-write the screen using the ESCape-E(dit) sequence described above. Sometimes when you hit ESCape to get back to the main ATW-80 menu, you'll find the menu selections have suddenly all shifted over to the right by 1/2" or so. No problem, just hit RESET. The shifted menu comes back fine when the screen is re-written, and any text you have in memory will still be there after the reset.

SpartaDOS-X Users: Indications are that the SDX ROMcart may be more susceptible to poor contacts in the cartridge port than previously suspected, and is especially critical for hard drive users. If your SDX cart appears unaccountably flaky, or your hard drive running under SDX seems to "lose track" of itself, check the gold-plated foil fingers on the ROMcart's edge connector. Even if they look clean and shiny, they could still bear a thin layer of oxidation that's just enough to create rectifying effects or add stray capacitance to the signal carriers. One of those soft pink rubber pencil erasers (Eberhard Faber "Pink Pearl" #101 or Dixon "Pink Carnation" #893) available from a dimestore or office supply store works best for lightly scrubbing the contacts without harm to the ultrathin gold plating. The eraser on an ordinary pencil is not recommended. Try it, you'll probably be amazed how much nasty black stuff comes off on the eraser, and the foil contacts will probably turn from yellow to almost white. After brushing away any rubber particles, you'll enjoy considerably more reliable performance from SDX. We're even beginning to suspect that all products packaged in ICD ROMcarts (SDX, Express!, Diamond GOS, etc.) may be susceptible to this phenomenon.

We want bugs! If you have a hot tip on hardware/software usage or an undocumented bug in a program, we want to hear about it! Send your info to AC at our Editorial Office, 179 Sproul Road/Rt. 352, Frazer PA 19355 USA, ATTN: TnT.

Moonlight Workshop

The XL/XE Guide to Expanded Memory, Part 2

Jeff McWilliams, AC Staff Columnist

In Part 1 of this series I dug into the technical specifics of how expanded RAM worked. You might be wondering why. After all, the main focus of this series is supposed to be about expanded RAM applications, not programming. Using applications is supposed to be simple. You boot them or load them from DOS, do what you have to do, and then forget about them. Nothing could be easier, right?

Two At One Time?

Suppose you were running two programs at the same time. Things might get complicated then because both applications could try to use the same areas of memory and wipe each other out. That's not a problem for us, though, because we don't run two programs at the same time, do we? *Sure we do,* all the time! Sometimes I run three at the same time. Have I lost my mind? Humble Atari 8-bit computers can't do that! Or can they?

What happens when you boot DOS 2.5 on a 130XE? RAMDISK.SYS loads, sees that you have at least 128K of memory, and takes that extra RAM and makes it act like a disk drive. Ever thought about how it does that? It works like this: RAMDISK.SYS loads into memory and stays there, loitering around until DOS or another application requests disk access to D8:. In other words, RAMDISK.SYS is **always** in memory doing its thing. When you load an application from DOS 2.5, you then have two programs running: RAMDISK.SYS and the program you just loaded.

There are other programs that get loaded into memory and stay there, like the R: handler for your P:R: Connection or 850 interface, or the 80 column handler for the XEP80. With all this stuff hanging around in your computer's RAM, something is bound to go wrong sooner or later. Murphy's Law says so, and believe me it does happen. When things go awry for seemingly no logical reason, it's better to have a host of technical information at your command than to languish in frustration not knowing what went wrong or how to fix it. Dealing with expanded RAM is especially tricky because of the way it's implemented on our Ataris. When Atari created the 130XE with 128K, they should have added some routines to the Operating System to manage that extra memory.

Memory Management

Suppose you boot SpartaDOS on a stock 130XE, load RD.COM to set up a RAMdisk as D8:, and copy some files to it. Your files are now stored in expanded memory, which is emulating a floppy drive. Now you load up Textpro XE and load a 40K file from your D1: drive. A 40K file would occupy the main bank, and banks 1 and 2 of Textpro XE. You edit it, move some stuff around, and then save it back to your floppy drive. You exit back to DOS, and examine the files you have stored on D8:, your RAMdisk. Surprise! They're corrupted!

What happened? Both RD.COM and Textpro wanted to use the same memory for their own purposes. The RAMdisk driver was using the extra 64K to emulate a disk drive and store files, while Textpro was trying to use that same RAM to hold your document. Neither one has much consideration for the other, so Textpro simply *clobbered* your RAMdisk, and all the files that were in it. What if those files represented hours of work you hadn't saved to disk yet? You'd be pretty mad, wouldn't you?

Another Sunnyvale Legacy

If Atari had put memory management routines into the 130XE Operating System (OS), these nasty things wouldn't happen. The RAMdisk program would have let the OS know that it was reserving the expanded RAM for its own uses. When you loaded Textpro XE, it would have asked the OS if it was okay to reserve some RAM to hold your 40K file. The OS would have denied Textpro's request because all expanded memory was already being used by the RAMdisk handler. Textpro would have refused to load your 40K file from disk because it wouldn't have enough room of its own to hold it.

That wouldn't be as bad as Textpro clobbering the RAMdisk! Those memory management routines would have been easy to implement too. This isn't a totally new concept to Atari 8-bit developers. The OS that comes with the Turbo816 card has memory management routines for its 16-megabyte addressing capability as well as memory management routines for standard 130XE banked RAM. The Diamond GOS also had its own HIMEM drivers for 130XE expanded RAM. Programs written explicitly for Diamond were supposed to use the Diamond HIMEM drivers when using any expanded RAM.

I mentioned in Part 1 that Claus Bucholz had changed his 256K upgrade immediately after hearing about the 130XE. Initially his method used 32K sized banks. When the specs for the 130XE became available, Claus modified his upgrade so that it would be compatible with the 130XE. He did this because Atari set the standard for expanded memory. If they had put in memory management, it would have been the standard too. Software written to utilize expanded memory would have done so through the memory management routines in the operating system. Your wordprocessor wouldn't clobber your RAMdisk because it would query the OS for available memory and only use it if the OS said some was available. Atariwriter+ wouldn't clobber your DOS 2.5 RAMdisk, and Textpro XE, the X-COM Wedge, and Snapshot 1.5M would all be happy running at the same time, assuming you had enough RAM to support all three programs.

Atari didn't put those routines into the OS, and there isn't much that can be done about it now. Suppose we all convinced CSS to revise the Ultraspeed+ OS to include memory management routines, or for MyDOS to have them? It wouldn't make a difference because you would have to patch all your programs so they "behave" and use those routines. If you used even one program that ignored the memory management calls, you might as well not use them at all. That one misbehaved program might wipe out all the data that was supposedly reserved by the other utilities you have running. The chances are practically nil that the 8 bit community could patch each and every expanded memory program so they all behaved.

Not having memory management isn't the end of the world. We get by. We've been getting by for years, and we'll continue to do so. Since the computer can't make sure programs and data "collide" by attempting to use the same RAM areas, we have to do it ourselves.

This means knowing which utilities and applications work together, and which ones don't. It may also involve taking extra measures to configure your programs in special ways so that you can use two or more of them together. Being able to do all that requires you, the user, to have that all-important knowledge about

how expanded RAM works. You have to be able to call upon those technical details about banked RAM we discussed earlier.

"XE" Banks

Recall that in Part 1 of this series we talked about "Port B". This was the hardware location we wrote to in order to enable BANKED RAM, and to indicate which bank was supposed to appear in that memory window from 16384-32767 ($4000-$7FFF in base 16 notation). The 130XE has 64K of expanded RAM, divided into 4 banks of of 16K each. Thus, one of 4 different values can be written to Port B, each value enabling one of the 4 available banks of RAM. On upgrades between 256K and 1088K, you have 12 to 64 banks of RAM that can be enabled by writing to Port B. If you take the 4 numbers that you wrote to Port B on a stock 130XE, and wrote those same numbers to Port B on a machine with 256K or more memory, the effect should still be the enabling of 4 different banks of expanded RAM. That's what makes these machines "130XE compatible". All expanded memory computers have at least these 4 memory banks in common. Because of this commonality these banks are named the 130XE banks. These XE banks are numbered 0-3.

Some programs only assume you have a 128K 130XE, and so they only use those 4 banks. Other programs with loftier goals can access any and all expanded RAM, and can be specifically told to leave banks 0-3 alone. If you have one program that only uses the 130XE banks, and another like a RAMdisk driver that uses everything **but** the 130XE banks, then those two programs *should* work together. This is the key to managing your memory. The trick of course, is to determine what parts of expanded RAM each program uses, so you can determine if they're compatible with each other.

Expanded RAM programs can be divided into three basic categories, as shown in Table 1. Once you've categorized your programs, figuring out whether two expanded RAM programs will work together is easy. I've created a little memory compatibility chart you can use to determine which programs should work together. First determine which category each of the two programs in question fall into from Table 1. Then go to the chart in Table 2, following one program type horizontally and the other vertically until they meet. The YES or NO in that box will tell you whether or not the programs should work together. You'll notice mostly "NO"s in the squares. That's partly because my chart is rather conservative. In general, the information in Table 2 is true, but there are tricks you can do with certain programs to make them work together even though the chart predicts otherwise.

Category Description	Category Type
Use only the XE banks	XE Programs
Use any banks except the XE banks	PLUS Programs
Use any and all banks	XE+ Programs

Table 1. Categorizing Programs According to Memory Usage

TYPE	XE	PLUS	XE+
XE	NO	YES	NO
PLUS	YES	NO	NO
XE+	NO	NO	NO

Table 2. Simple Compatibility Chart by Program Type

Some programs can operate in one of several modes. The Disk Communicator by Bob Puff is one. When you first load the program, it asks if you want to use XE memory. It then asks if you want to use ALL XE memory. If you answer NO to the first question, Disk Communicator won't touch any expanded RAM. If you answer YES to the first and NO to the second, then Disk Communicator will operate as an "XE Program". If you answer yes to both questions, assuming you have more than a stock 130XE, Disk Communicator will operate as an "XE+ Program". Later on when we start looking at individual programs, I'll include tips and tricks that will make certain combinations of programs more compatible. We're almost there. It's time to explore how programs use expanded RAM, starting with one way that's guaranteed to significantly boost your 8 bit computing productivity no matter what you do with your Atari.

RAMdisks: Faster Than Warpdrive!

From the beginning, RAMdisk programs have been the biggest users of expanded RAM. A RAMdisk emulates a floppy drive. Instead of data being read or written to a disk, it's read or written to expanded RAM. In Claus Bucholz's "Quarter Meg 800XL" article in *BYTE* magazine, he provided code that created two 90K RAMdisks as D7: and D8: for DOS 2.0s. Now just about every DOS currently in use has a RAMdisk driver in one form or another. A RAMdisk is a super high speed device that can drastically reduce the time you wait to load applications and read or write data. It can also reduce unnecessary wear and tear on your floppy drives when doing database operations or when compressing or uncompressing files. Additionally, a RAMdisk can increase the versatility and usability of your computing system, especially if you only own one floppy drive.

When Ben Poehland and I were running the 1992 Mail Campaign to get *AC* started, I used a database program called TurboFile from Micromiser Software. TurboFile was responsible for all the mailing lists, and for collecting the data written on those 600-odd postcards people sent back to me. When *AC* became a reality, I dumped my database files onto a disk and sent them to Ben. To this day, TurboFile is still handling all the mailing lists for this magazine. Despite a few bugs and quirks, there is no other database that can do for *AC* what TurboFile does. *[Editor's Note: this fellow is* much *too modest; see "Saga of the AC Database" elsewhere in this issue for how Jeff solved a TurboFile problem that had this magazine on the ropes. - BLP]*

TurboFile is a disk intensive program. Along with its companion application Turboword+, it consumes at least 200K worth of disk space because of all the little modules and support files that make up these two applications. There are different modules that get loaded to accomplish different tasks, like account set-up, data entry, sorting, and printing. What's more, database records are divided and put into 26 separate files. As you move about in TurboFile, doing the things that databases do, your computer is constantly reading and writing data and modules to and from the disk. Using TurboFile from a floppy drive- even with Ultraspeed- is just awful. You constantly wait as the drive grinds away reading and writing all that data. Entering new records into the database is unbearable!

My 800XL has the Newell 1088K memory upgrade installed in it. I set up a 960K RAMdisk as drive #1 under SpartaDOS-X and copied all my applications and data from floppy to the RAMdisk. From that point on, all TurboFile operations were done completely from the RAMdisk. Menus appeared instantly because each module loaded at electronic machine speed instead of the slow mechanical speed of a floppy drive. Searching a database of 800 people took only a few seconds instead of several minutes. The speed difference was like going from a 10-speed bike to an F-15 Strike Eagle screaming along at Mach 1.5.

UNARCing a file takes very little time compared to doing the same operation from a floppy disk drive. Even uncompressing a file as large as 80K is no big deal. The same applies to running a UUdecoder on stuff obtained from the Internet, or running SDVERT to change those Line Feed/Carriage Return codes into Atari 8-bit End Of Line codes.

Poor Man's Hard Drive

A RAMdisk is also great if you only own one disk drive and need to copy lots of files around. My 256K 1200XL has an XF551

disk drive attached to it, upgraded by CSS to a 3.5" 720K drive. With this upgrade I can read files written to MS-DOS formatted disks. Since I only have the one disk drive attached to my 1200XL, the easiest way to copy MSDOS files to an Atari disk is to first copy them to a RAMdisk, and then from the RAMdisk back to an Atari disk.

If you have a really large RAMdisk, like the 960K one in my 800XL, it can act like a poor man's hard drive. I'm using Turboword+ to write this article. Turboword+, TurboFile, and the TW+ spelling dictionary are all sitting comfortably in RAM along with Omnicom, BobTerm, Textpro XE, and some miscellaneous utilities. All tolled, I have over 140 files consuming 668K of my RAMdisk. No problem, I still have more than 250K free for anything else that needs to be loaded. Transferring a program from the University of Michigan Atari Archive on the Internet to my Atari goes something like this:

- Load OmniCom, my VT100 emulator. Log onto the Unix system, find and transfer the desired file from the Atari Archive to the Unix system.
- Quit OmniCom and load BobTerm, while the modem remains connected to the university computer. Use Ymodem protocol to download the file.
- Use the SpartaDOS-X ARC utility to de-ARC the file.
- Use SDVERT if necessary on the documentation file to convert ASCII carriage returns into Atari 8-bit End of Line codes.
- Jump into Textpro and execute a macro that removes any extraneous linefeeds from the documentation file, leaving linefeeds only at paragraph breaks.
- Load Turboword+ to view and edit the file in the comfort of an 80-column display. When done, print the documentation, staple the pages together, and file it away in my doc folder.

If I had only a floppy drive, even an Ultraspeed floppy, the above process would be quite tedious because so much time would be wasted waiting for the different applications to load. With every application immediately available in the RAMdisk there's a *huge* savings in the time needed to perform the above tasks.

As we've seen, a RAMdisk can be extremely valuable in all sorts of situations. It saved me both time and wear and tear on my floppy drives when using the Mail Campaign database. It makes copying files easier when you only have one disk drive. Best of all for me, it acts like a built-in warpspeed hard drive. Considering the modest cost of DRAM chips these days, all this added performance comes at a bargain-basement price.

RAM Volatility

It's important to remember that the contents of RAM disappear when you turn off your computer. That's one of the bad things about RAMdisks. If you really like having a certain set of applications constantly available in RAM, you will have to put them on your RAMdisk every time you turn on your computer. With a big 960K RAMdisk like mine, it can take a good 15 minutes to load all 600K worth of programs and data files from floppy into RAM. What I do is leave the computer on for days at a time to spare myself from this annoyance. This way my favorite applications are always loaded into the RAMdisk without that 15 minute wait.

Important files like downloads and manuscripts in progress are always saved to floppy at regular intervals. The last thing I need is to lose hours of work due to a power outage, surge, or a program that crashes and corrupts parts of my RAMdisk. I reduce the chance of that occurring as much as possible by making sure my power line and my phone line are connected to surge suppressors. A line conditioner with brownout protection would be much better, but also a lot more expensive. Having a TransKey and the TKFreeze circuit installed in my computer also helps. The Transkey is a product that lets me use an IBM keyboard with my 800XL. The TKFreeze is an additional circuit for the TransKey that forces a cold boot of the computer when I press [ESC]-[SHIFT]-[DELETE] all at the same time. There have been many occasions when this has saved my day by allowing me to reboot from a crashed program without wiping out the contents of my RAMdisk.

Next Time: The AC Guide To Expanded Memory continues with a look

Swap 'n' Shop

A Flea Market for All Atari 8-Bit Users!

Ads are FREE to paid subscribers, limit 50 words, see the February '93 SnS column for full details on rules for personal ads.

NAACC: the North Attleboro (MA) Atari Computer Club is seeking new members interested in 8-bit and ST/Falcon. Come to our meetings on fourth Thursday of month. Computer Zone, 28 East Washington Street, North Attleboro, MA 02760 or write to: Joe Heroux, 25A Sunset Drive, Medway, MA 02053.

WANTED: September 1986 issue of ANTIC magazine with disk. Also interested in purchasing any AtariLab modules. Nolan Friedland, 34108 Lily St. NW, Cambridge MN 55008. Phone: 612-689-3711.

WANTED: Dead or Alive: Microflyte joystick for the 8-bit, with software. Also seeking Flight Simulator II Scenery disks 3,5,10,12. William J. Brown, 165 Blossom Hill Road Space 157, San Jose CA 95123. Phone: 408-365-9211.

WANTED: ANALOG issue #1 (Jan/Feb 1981) original or xerox copy, will pay fair price. Also seeking ANTIC Vol. 1 issues 2 & 3 (1982), originals or copies. Also seeking early issues of COMPUTE!, numbers 1-16 (1979-1981). Ben Poehland, 179 Sproul Rd./Rt/ 352, Frazer PA 19355. Internet: poehland%phvax.dnet@smithkline.com.

SALE: New dust covers for Atari XF-551 disk drive, recommended by The 8-Bit Alchemist. $10 each plus $4 postage. Ron Mandel, PO Box 151, Burtonsville MD 20866.

[Editors's Note: interest in this column appears to be dying fast. We'll probably cancel this column if we don't start seeing some more ads coming in here pretty soon. Send ad copy to: ATARI CLASSICS, 179 Sproul Road/Rt. 352, Frazer PA 19355 USA, ATTN: SNS Column. HARDCOPY ONLY, please. -BP]

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